



>> **VAASANPUISTO · EMBRACING THE WATER** <<

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OVERVIEW OF THE PROJECT PROCESS

PURPOSE

The purpose of this booklet is to provide a detailed understanding of the process that was followed for the conceptual development of the Vaasanpuisto area. This includes an analysis, methodology and outcome.

This booklet will highlight the key areas that contribute to the overall Vaasanpuisto design. It takes into account the particular visions of the local area focusing towards a more sustainable and innovative Turku. The conceptual outcome provides holistic planning, design and sustainability options which are not exhaustive but rather a starting point to initiate conversations between the local and wider Turku community which will lead to an in-depth approach for the steps of realising the Vaasanpuisto vision.

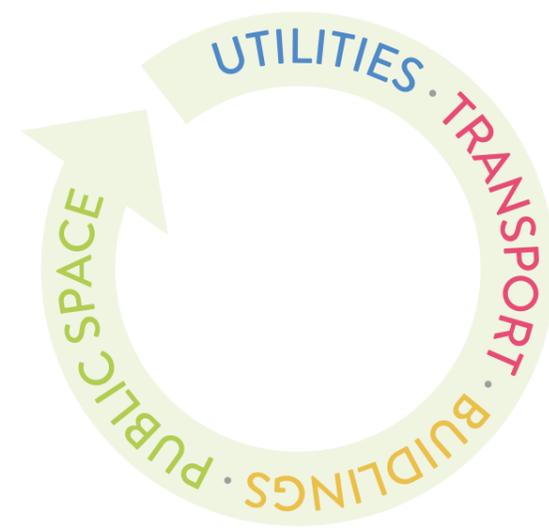


Fig. 2: Urban Systems

URBAN SYSTEMS APPROACH

Our overarching approach to developing the conceptual design for Vaasanpuisto is through identifying the urban systems that contribute directly to the site as well as the surrounding environment and the wider Turku area. The four key areas that are addressed throughout the design process are:

Utilities, Transport & Mobility, Buildings and Public Spaces.

ANALYSIS

A holistic analysis has been completed as the first part of the conceptual development. This is separated into three key time periods: the past, present and future of the

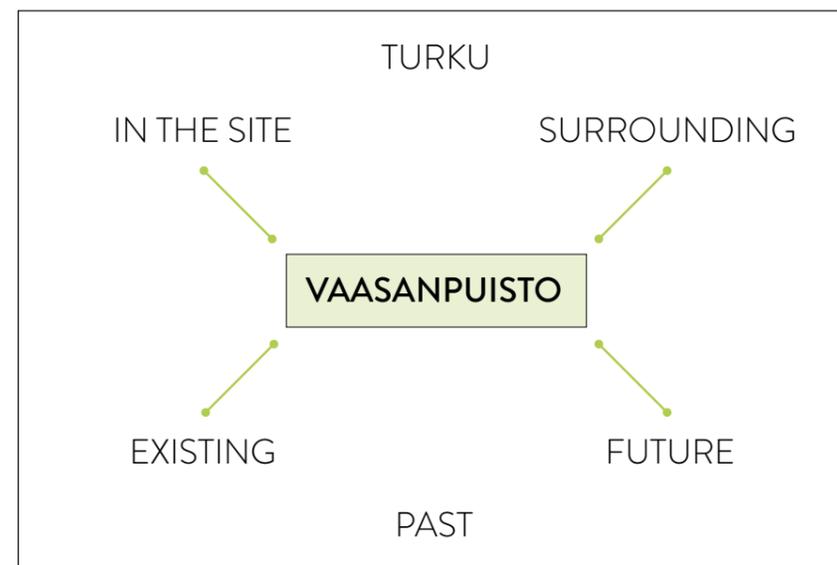


Fig. 1: Key considerations

Vaasanpuisto area. The aim is to determine what could be implemented in the site with the element of time which is also considered in the methodology and outcome. Another important part of this analysis is to understand the surrounding neighbourhoods of Vaasanpuisto and how they relate with the rest of Turku city.

METHODOLOGY AND OUTCOME

As the basis of our approach is closely connected with the organic transformation of the site over time, our methodology and outcome is completed with four key phases. All phases include a methodology which considers the ecological, social and economic opportunities for the development as well as mentioning which stakeholders should be involved in the process.



Fig. 3: From small to big scale

CHAPTER 1

ANALYSIS **SYSTEMS AND PREDICTIONS**

In order to realise the concept and methodology of Vaasanpuisto, a holistic analysis has been carried out for the site. This includes understanding the history, existing environment and future trajectories of the area. The aim is to combine these three factors to determine what Vaasanpuisto can become and how it can transform into a lively urban milieu for the City of Turku.

I. PAST · ONCE UPON A TIME ...



Fig. 4: Vaasanpuisto in 1973

The history of Vaasanpuisto as can be traced to the Second World War period when the area was first built up for German barracks, earning the name Little Berlin. In the decades after the war, the area of the park, as well as the surrounding fields of Iso-Heikkilä district were transformed into an industrial zone of Turku.

After the war, the area of Vaasanpuisto was utilized for a wastewater treatment plant (see Fig. 1) which was operational from 1968 until 2009 when the facility was moved to Kakola. The plant significantly affected the layout and shape of the site, creating a unique topography in the whole Iso-Heikkilä district. The water elements visible today are remnants of different clarifiers and tanks of the facility while the uneven ground layered by different rocks



Fig. 5: Vaasanpuisto in 2015

and gravel is the result of a more recent use of the area as the City's snow dump (see Fig. 3). Around the plant new transportation links were created, mainly the motorway link to the harbour on the west, moving the road from the plant to directly connect to Juhana Herttuan street and the harbour area, creating a large intersection visible today. The green areas were a part of the Vaasanpuisto early on. These contain valuable individual trees as well as valuable continuous green zones in a mainly industrial, grey area.

Few years prior to closing the plant, the area's future development was incorporated in the master plan for the western side of Turku, between the Turku Castle and Iso-Heikkilä district, i.e. the Linnakaupunki project. However, development of the area was immediately slowed down



Fig. 6: Vaasanpuisto in 2019

due to significant pollution in the soil and in the buildings of the former plant. Initial plans (2007-2010) predicted residential areas for up to 2.000 new inhabitants with high-rise buildings used to create new and distinctive landmarks in the area. The goal became to transform this and surrounding brownfields into a lively urban area with maritime character complementing the harbour area.

II. PRESENT · DEMOGRAPHICS

According to the available population statistics available for post areas, as of 2017 there are 2204 inhabitants in the area of Iso-Heikkilä what makes up 1.16% of total Turku population. It is smaller in population from neighbouring areas of Turku Keskusta to the east and Pahanieniemi to the west whereas it is three times bigger than northern Pitkämäki area. The size of the population can be explained with the area of Iso-Heikkilä mainly containing the industrial areas of east Iso-Heikkilä and east Pahanieniemi and northern parts of the harbour and the Juhana Herttuan puistokatu with the only truly residential part being the west Iso-Heikkilä neighbourhood.

The age structure of the population mainly reflects the general character of the space as the work and industry area of the city, but also follows the age structure of Turku as a whole. The age group 16-64 makes up 69.4% of the population (in Turku 66.65%), while the age group 0-15 makes up 6.17% (in Turku 12.87%). The quarter of the population is older than 65 which can be explained by two existing retirement homes in the area and by 24% of the present households being pensioners'. The average size of the household is 1.4 indicating the prevalence of single person households with only 7.4% being households with children. The surrounding areas have a similar household structure with only Pitkämäki having the average size of the household 2.4 due to the low-rise, single family houses in the area.

Vaasanpuisto is spatially located in the center between these, population-wise, different areas and is a clear discontinuation of functions in the urban space, both in north-south and east-west directions. The area offers the possibility to extend existing functions of neighbouring areas and provide better services to the existing residents. However, it is surrounded by future development areas of Kirstinpuisto and Herttuankulma with expected 3600 and 4400 new residents, respectively, that create additional social and economic pressure on this undeveloped area.

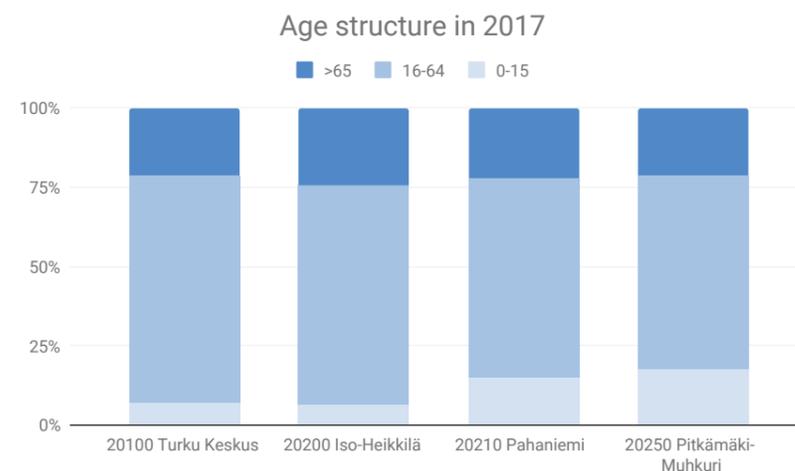


Fig. 7: Age Structure 2017

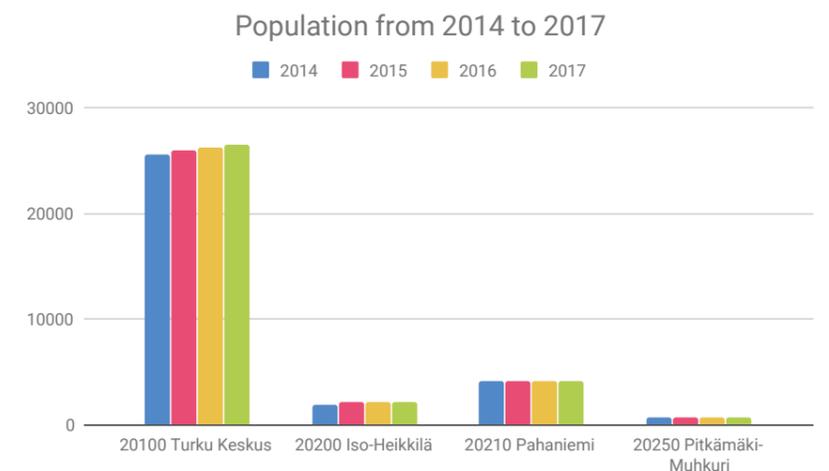


Fig. 8: Population from 2014 to 2017

II. PRESENT · URBAN SYSTEMS · UTILITIES

SITE

Vaasanpuisto is spatially divided into three sections: The west section is the eastern Patterinhaka which is a protected green area containing valuable trees with a pedestrian/bicycle path along the Vaasantie.

The middle section is a protected green area defined by Vaasantie on the left and a pedestrian/bicycle path along the fence of the former wastewater treatment plant. It is a triangle-shaped area transversed by another pedestrian/bicycle path. The east section is the former wastewater treatment plant defined by its fence, a surrounding tree line, and also the roads on the north, south and east (Ruissalontie, Tukholmankatu and Kirstinkatu respectively) and the pedestrian/bicycle path on the west. The area can additionally be divided based on the environmental condition, value and impact. Vaasanpuisto is made up of the west section with protected green areas and the east section with contaminated former plant area. Within the former plant area sections can be defined with severely contaminated soil in the southwest corner, in the east along the Tukholmankatu and within the built area.

The impact of water on the site varies as the main flooding areas are concentrated in the east, whereas the west is mostly unharmed. In the east, the highest flood levels are between and surrounding the existing buildings. The site contains areas with valuable trees which in some parts overlap contaminated and flooding areas. The former

plant area contains two sections around the buildings which contain rows of Douglas fir and Lime trees. The trees in the west section of Vaasanpuisto are deemed valuable as part of Patterinhaka park area, such as the historically valuable willow trees.

Fig. 9: Flooding events within the site



Fig. 10: Trees on the site

II. PRESENT · URBAN SYSTEMS · TRANSPORT

CITY

Turku is situated along the Aura river which is crossed with eight bridges. The highways are placed radially from the city towards Espoo and Helsinki in the east, Rauma to the north and Tampere to northeast. The city is crossed by a railway connecting it and its harbour to Helsinki, Tampere and Uusikaupunki. Public transportation is operated by the city-owned company Föli which manages the public bus and bike-sharing.

SURROUNDING AREAS

Tukholmankatu in the south and a railway in the north create a large border between Iso-Heikkilä and the harbour and Port Arthur. In the south, Juhana Herttuan puistokatu and Nosturinkatu create access towards the riverfront and Turku Castle. Iso-Heikkilä, Port Arthur and Satama area provide cycling paths, however, there are no city bike stops. The areas are serviced by city bus mainly connecting them the city center to the east and to Ruissalo and neighbouring municipalities to the west.

SITE

The form of Vaasanpuisto site is defined by Ruissalontie on the north with two access points to the old plant, Tukholmankatu on the south connecting it to the city center and Vaasantie on the west towards the residential area. Crossing Tukholmankatu, the site is connected to Turku Castle and the harbour by two roads converging into one in the south. The intersections on Tukholmankatu have

clear crossings, allowing pedestrian access to the site from south. The site is serviced by 5 bus lines with 8 stops around the area. The west side of Vaasanpuisto is cross-crossed by cycling and pedestrian paths while the site of the old plant lacks any paths or roads.

Fig. 11: Public Transport

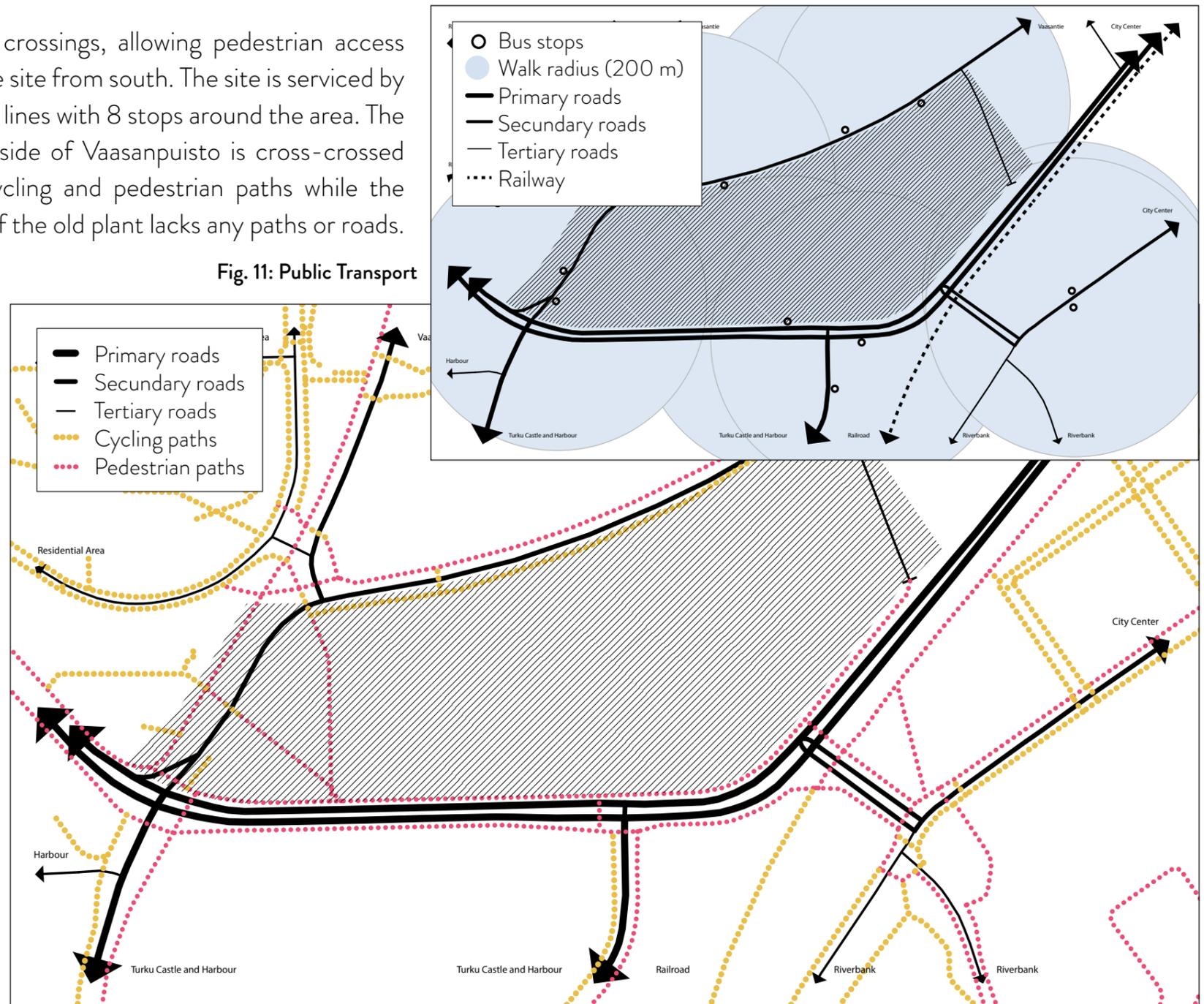


Fig. 12: Cycling and Pedestrian paths

II. PRESENT · URBAN SYSTEMS · BUILDINGS

CITY

The city is mostly built up along the Aura river and surrounding main roads from the city towards the east as well as along the detour on the edge of the city. The central area along the river was mostly built in the 19th century and is characterized in block building with an orthogonal road network. Port Arthur is somewhat low-rise residential area with preserved wooden houses. Higher buildings appearing towards the coast, the harbour and along the riverfront. The center of Turku on the north side of the river is characterized by medium-rise buildings of mixed use, residential and commercial. There are also important historical sites of Kakolamäki, St. Michael's church and adjoining Mannerheiminpuisto and Puolalanpuisto.

The south of the river is characterized by large green and public spaces with blocks of medium-rise buildings. The area was developed around the Old Great Market with the landmark Turku cathedral surrounded by three historic parks. North from the cathedral is the University area with mostly public buildings and student housing. Towards the southwest, along the river, three green recreational areas of Vartiovuori, Samppalinnan vuori and Urheilupuisto disturb the orthogonal road network. Along the riverfront, the medium-rise buildings are for residential and commercial purposes. Further south from the river prevail low-rise, family houses.

SURROUNDING AREA

A clear distinction in building typology is visible in the areas surrounding Vaasanpuisto. The old industrial sites in north and south mainly contain industrial buildings with occasionally commercial activities. The sites create a grey area surrounding the west Iso-Heikkilä area, Patterinhaka, where are located mainly residential buildings with few supermarkets and public services for the residents, including large green areas. This area was built in the 1950s and is considered the first Turku suburb. The area is divided between high buildings (up to 8 storeys) and low-rise family

houses. Port Arthur in the east is mainly residential with some commercial activities as well as parks and playgrounds. The main part is made up of preserved historical wooden houses whereas in the south, in Länsiranta and Kakola is low to medium-rise buildings with a mix of commercial activities, public services and residential areas. In Kakola is also located the new wastewater treatment plant as well as the historic site of Kakolanmäki. The harbour area and the area surrounding Turku Castle are currently mainly industrial and commercial area with large halls and low-rise buildings serving as offices and storage.

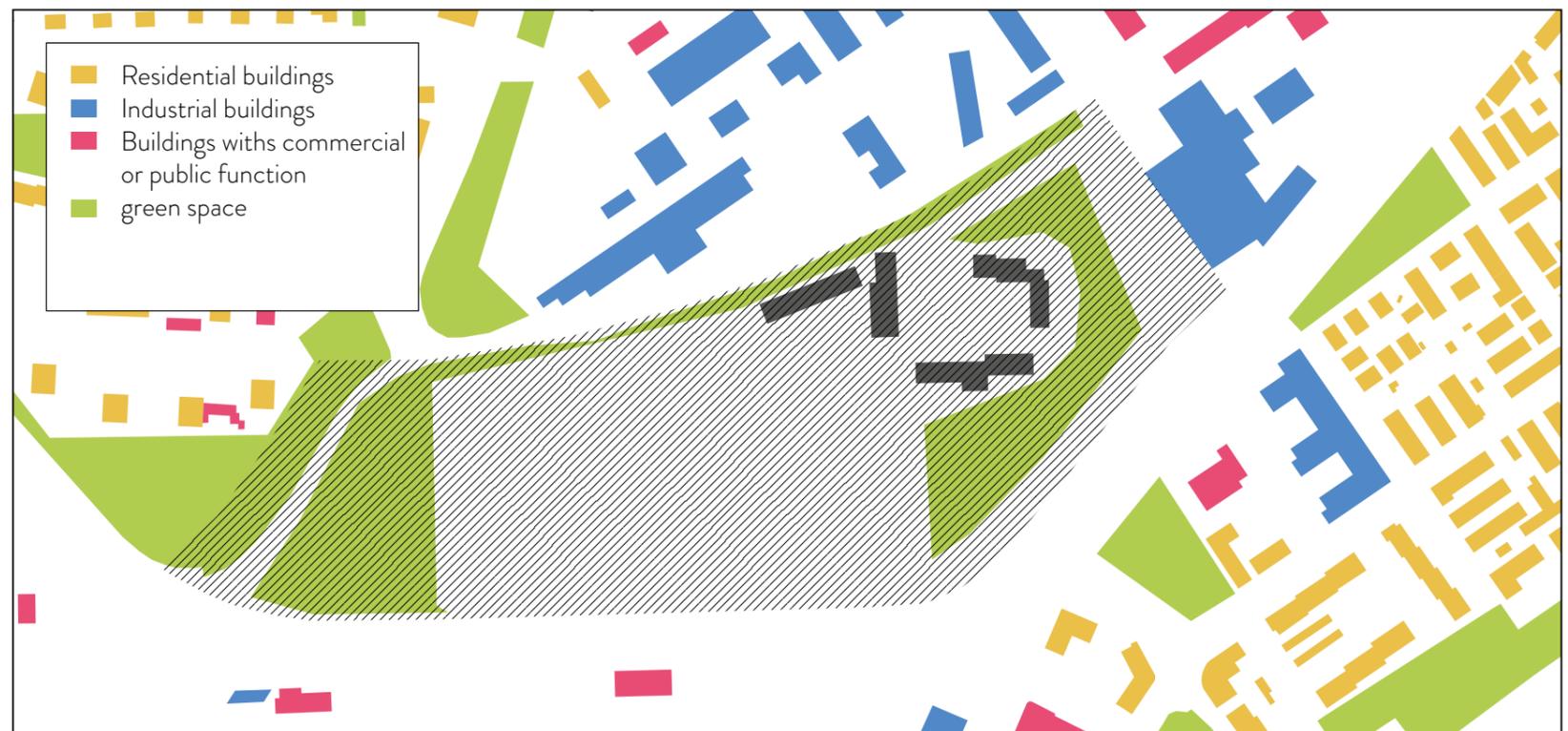


Fig. 13: Building typologies

II. PRESENT · URBAN SYSTEMS · BUILDINGS

SURROUNDINGS: ACCESSIBILITY

As shown in the above figure, Vaasanpuisto is accessible to several areas of interests within the city of Turku. Significant historical sites such as Patterinhaka, Kakolanmäki and the Turku Castle are all within one kilometer away from the site area, as well as Mukhuri Nature Reserve, St. Michael's Church, the aura river, K-market, a gym and a water treatment facility. Other sites like Turku Cathedral, Åbo Academy, the City Hall and the great old city square are all within 2.5 kilometers from the site. This map shows the distance and mobility pattern people travel to and from the planning site, which is a significant factor in analyzing what is happening around the site.

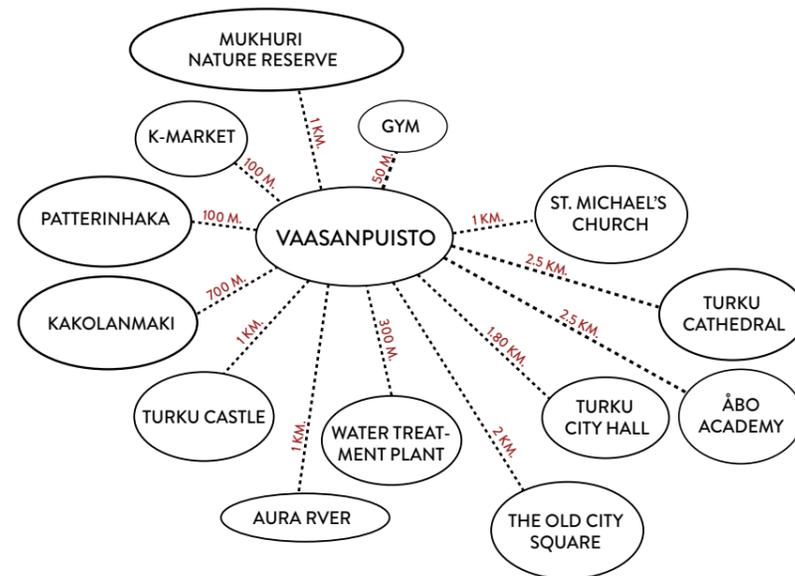


Fig. 14: Accesibility



Fig. 16: Existing buildings

SITE: BUILT STRUCTURES

Majority of the built structures within the planning site are characterised by low rise industrial buildings owned by the city of Turku and are rented out to companies as warehouses or repair shops. These buildings are constructed mainly of steel, concrete and brick materials, most of which are still in good condition. As shown in the satellite view of the planning site, these buildings are concentrated on the northeast side of the lot, along Ruissalontie and Kirstinkatu road. Aside from the existing structures, cluster of trees, wetlands, and piles of gravel dominate the entire site. Graffities on some of the buildings were also quite noticeable.



Fig. 15: Existing buildings



Fig. 17: storage on the site

II. PRESENT · URBAN SYSTEMS · PUBLIC SPACE

CITY

The city has a long history of parks with the oldest plantations dating back to the 1830s. The oldest parks are located in the downtown area between the Turku Cathedral and the Old Great Market, the Brahe Park, Porthan Park and Cathedral Park. Today, the main city parks are located more inland, towards the east of the city and create a network of 14 city parks. Green areas on the west, near the harbour are mostly connected to the Turku Castle and recreational areas on the islands and the north of the harbour. All green spaces are combined in Turku National Urban Park which spreads out from Kurala Village to Old Great Market and from Ruissalo island to Airisto Sea. The city also has 150 playgrounds throughout its neighbourhoods.

SURROUNDING AREA

In the Iso-Heikkilä area, the existing green areas located between the residential and industrial zones are protected. Iso-Heikkilä's residential neighbourhood has recreational zones to the north, two playgrounds and a play field. Additionally, in the area there are a library, two retirement homes, sports hall and exercise area. In Port Arthur, across the Tukholmankatu, there is another playground and additional open and protected green, public spaces. A bit further south, there are a library, a school, museums and play fields.

SITE

The site of Vaasanpuisto has no existing infrastructure other than the protected green areas of Patterinhaka. The area is mostly walkable with pedestrian paths criss-crossing the green area and providing safe passing along the motorized road. The site itself is owned by the city so it holds the potential of providing a large green public space for the local community. Within the site there are valuable trees of Limes and Douglas fir species, located in the south east section. In the southwest, green area of the site is the location of historically valuable and rare willow tree species. The use of the site has been limited after the closing of the wastewater treatment plant by fencing the area and using it as a city's snow dump during winter. The City of Turku is currently offering the site to be leased for public events however, this could be advertised more effectively.

Additional limitation to use of the site is the severe soil contamination of some areas as well as contamination of the existing buildings. The soil contamination is most severe in the southwest corner of the former plant area, southeast and east sides of the site which are also the areas where the most valuable trees are located.



Fig. 18: Schools and parks

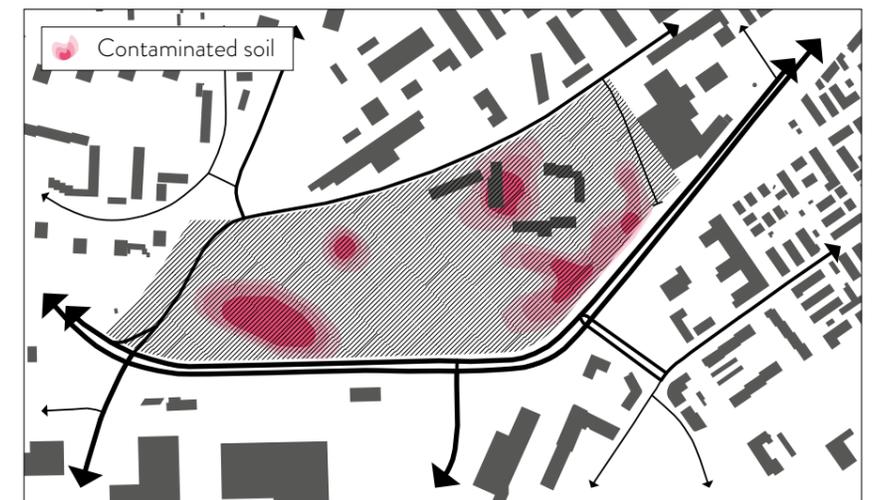


Fig. 19: Contamination on the site

III. FUTURE · DEMOGRAPHICS

CITY

Turku is a large city in the southwest of Finland with milder, maritime climate. Its history and economy accompanied by a strong University presence create multiple pull factors for migration. The City expects a large growth in total population mainly due to immigration from abroad as well as from other, northern cities in Finland. Due to this, the city invests in improving living standards, creating new jobs, public spaces, accessibility to services and different housing options.

SURROUNDING AREA

The harbour area and its surrounding industrial zone has been a grey area of the city for over half a century. With growth expectations and limited space for expansion, the City sees this as the new development area for new public and transport services, housing and commercial zones of Turku. The focus is to develop the area between Turku Castle and Iso-Heikkilä neighbourhood. The new Linnankaupunki will be made up of new Herttuankulma neighbourhood north from the Castle area, located between Juhan Herttuan puistokatu and Nosturikatu which should house up to 4400 new residents.

It will then connect to Vaasanpuisto and the new Kirstinpuisto neighbourhood in the east Iso-Heikkilä which should house up to 3200 new residents. The new

development is expected to include a new tram line, as well as bus and city bike stops which will provide north-south connection for public transportation in the area.

These plans follow the demographics projections until 2050 for the areas of East and West Iso-Heikkilä and Rahtisatama as seen in the graph. With the population currently over 2200, the additional 7600 planned in the newly developed neighbourhoods will be within the projected population size in year 2050. It is also expected that these new developments and their residents would arrive in the area in phases over the coming decades.

SITE

The City of Turku has plans to develop Vaasanpuisto into a residential area with other functions in addition to housing. There are also plans to develop a school and day-care centre in the site. Other considerations include:

- Historic townscape
- Views of Turku Castle
- Building sizes, directions and heights
- Flood Routes and Contaminated Soil
- Construction Efficiency

As the latest site set for redevelopment, there is no official preferred number of new residents for the area.

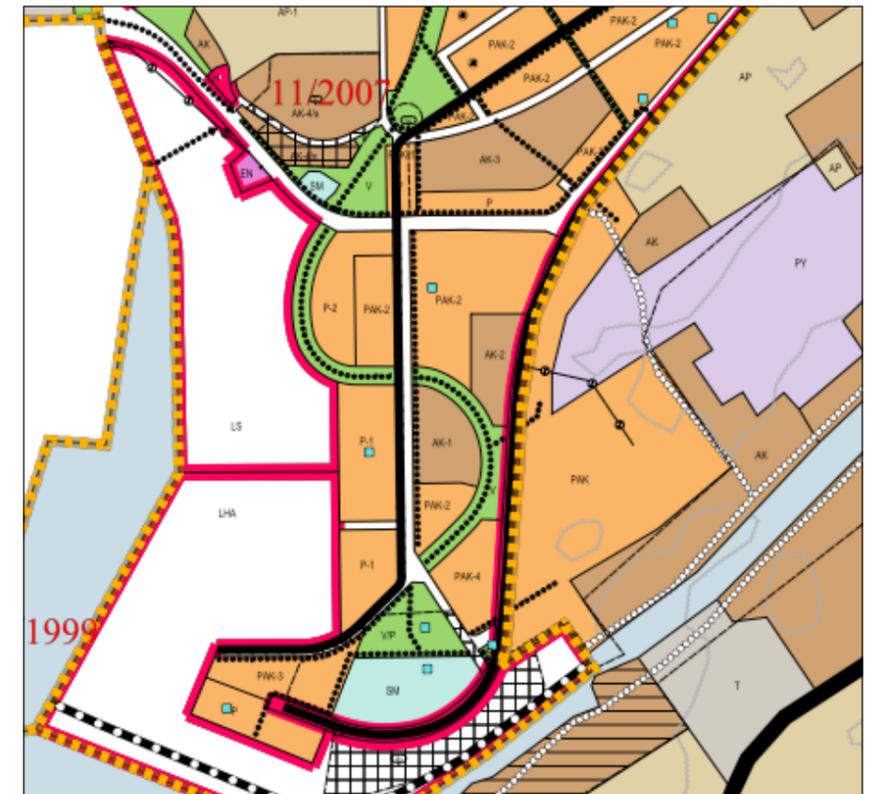


Fig. 20: Masterplan , City of Turku

Iso-Heikkilä East and West and Rahti-satama population projection for period 2017-2050

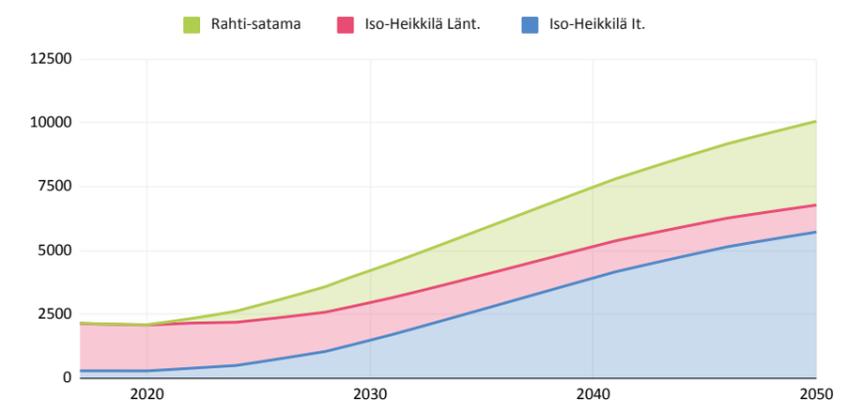


Fig. 21: Population Projection

III. FUTURE · MATERIAL FLOWS

A material flow analysis has been developed based on the projected population within the surrounding neighbourhoods in order to understand the projected resource consumption within the area. This will provide an understanding of what initiatives could be implemented within Vaasanpuisto to reduce these direct resource demands as well as avoid waste leaving the site.

INPUTS

ENERGY

Turku Energia is the provider of electricity and district heating for the city where it is predicted that approximately 171GWh of electricity transmission will be required for the surrounding neighbourhood.

ENERGY				
type	amount / GWh	per person (GWh)	projected (GWh)	projected (kWh)
Electricity	1,518	0.00793	78.54555	7854447
District Heating	1,623	0.00848	83.97855	83978550

WATER

There is a projected freshwater consumption of over 600,000m³ per annum which is currently provided by Turku Region Water Ltd. The water is distributed from the Kokemäenjoki river via groundwater pumps however, there is an opportunity to reduce the consumption of external water supply as the collection point of local ground and rain water is situated in the site. This could also provide

an opportunity to collaborate with local researchers and companies to pilot biofiltration techniques as well as incorporating other Water Sensitive Urban Design (WSUD) methods such as green roofs on the buildings.

WATER			
type	amount (m ³)	per person (m ³)	projected (m ³)
Freshwater	12 200 000	63.763843	78.54555
type	amount (l/m ²)		projected (kL)
Rainwater	661		818077.8124

FOOD

The largest category of foods consumed are fruits and vegetables resulting to 1,217 tonnes required per annum for the surrounding neighbourhoods. With the development of the Vaasanpuisto area, this will increase further. However, demand could be reduced by implementing local community gardens and edible landscaping.

FOOD		
type	per person (kg)	projected (t)
Wheat	45	441.54
Other Grain	31	307.89
Pork	32.5	321.75
Poultry	25.6	253.44
Beef & Veal	19.3	191.07
Other Meat	1.4	13.86
Milk	120.6	1193.98
Yoghurt	20.2	199.98
Fruits & Vegetable	123	1217.7
Cheese	25.7	254.43
Potatoes	46	455.4

OUTPUTS

EMISSIONS

The Turku Energia strategy for 2020 is to have at least 50% of their energy provisions to be sourced from renewable energy however, it is unclear when all sources will be replaced with renewables. Therefore, there is an opportunity to consider on-site renewable energy production to reduce the carbon emissions of the site.

EMISSIONS			
type	amount (kgCO ₂ per kWh)	projected (kgCO _{2e})	projected (tCO _{2e})
Electricity	0.185	14530928	14530
District Heating	0.14	11756997	11756

WASTE

Finland has the highest waste production per capita in the European continent. However, the majority of organic food waste and sewage sludge is used for bioenergy and compost. This is an opportunity to provide education around more sustainable consumption and how to up-cycle waste into valuable material such as compost for the community garden.

WASTE			
type	amount (kg)	per person (kg)	projected (t)
Overall		22,359	221354.1
Organic Food		23	227.7
Sewage Sludge	150000000	27.18376	269.11924

WASTEWATER

The majority of greywater is from hygiene and clothes washing and blackwater is a combination of dish washing and toilets. The blackwater and greywater are combined and pumped to the local Kakolanmäki Wastewater Treatment Plant. There are currently no known plans in separating the blackwater and greywater infrastructure for Turku however, this is an opportunity to collaborate with Turun Seudun Puhdistamo Oy in finding decentralised approaches to recycling greywater to reduce future freshwater demand.

WASTEWATER			
type	per person	projected (l)	projected (kL)
Blackwater	18597.78778	184118099	184118.099
Greywater	39852-40238	394538783	394538.7836
Other	2656.826825	26302585.57	26302.58557

III. FUTURE · TRANSPORT, BUILDINGS, PUBLIC SPACE

URBAN DEVELOPMENT AND A NEW TRAM LINE

According to the future master plan for the city of Turku, the surrounding sites of Vaasanpuisto will be developed as part of the city core, which will provide an attractive green, maritime area in the coming years. Kirstinpuisto to the northeast and Herttuankulman to the south will be transformed into a mixed-use residential-commercial areas, with emphasis on sustainable development solutions, as well as high-quality public spaces and green areas. Satama Hamnen to the west, which serves as an important gateway to the city will be transformed as part of the city-center redevelopment, with the aim to extend the city-center towards the sea and to increase the potential for developing the city's urban living.

In addition, a tramline that will pass through the planning site is expected to start by year 2026 the earliest. This development aims to support the growth of the city as well as to produce a sustainable urban structure that will increase the residents' well being.



Fig. 22: Green infrastructure

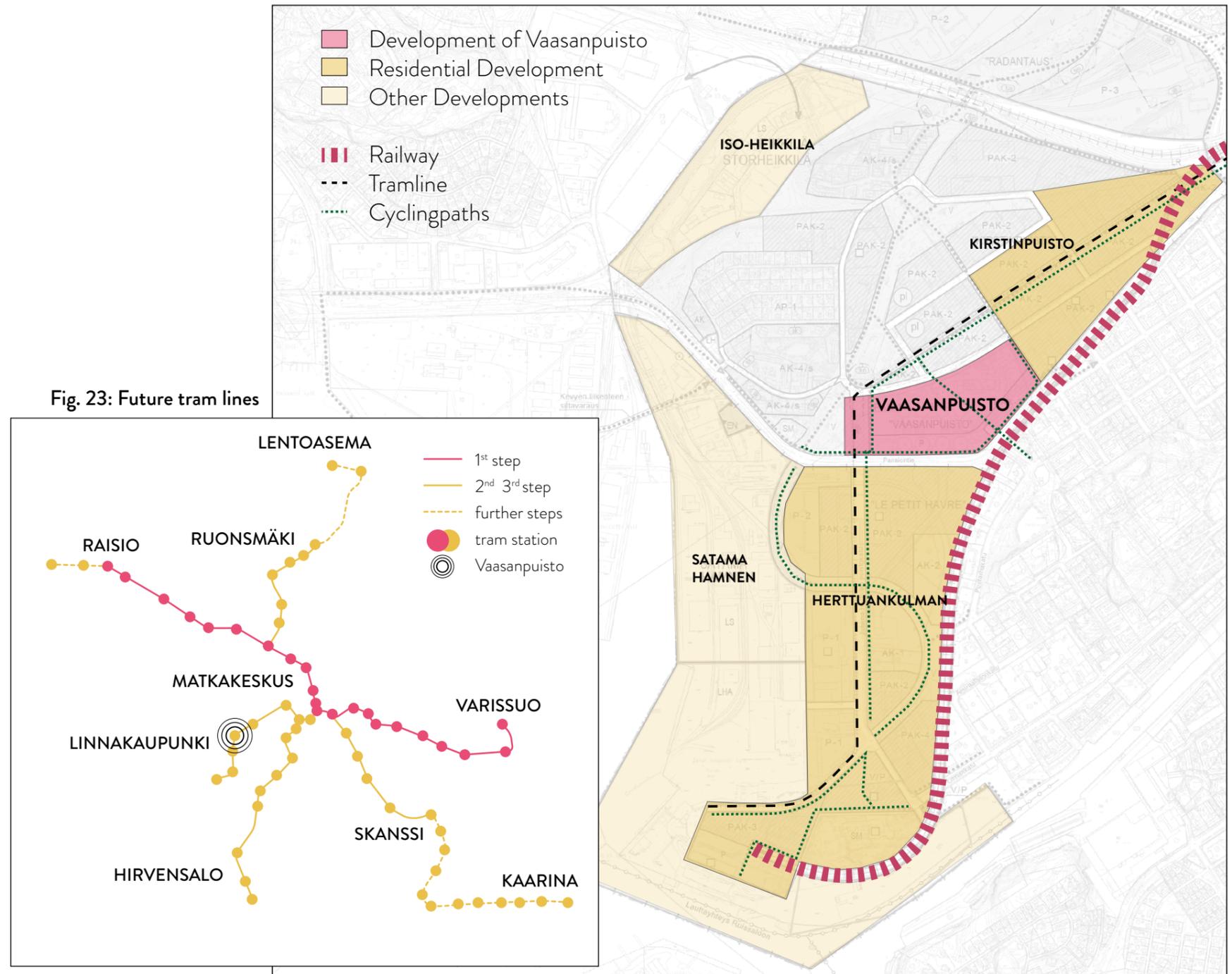


Fig. 23: Future tram lines

Fig. 24: Urban development areas

IV. VAASANPUISTO IN PICTURES



Fig. 25: Site visit ©Tubeo



Fig. 26: Ruissalontie © Cosic



Fig. 27: Vaasantie © Vilppola



Fig. 28: Pond on the site ©Tubeo



Fig. 29: Pond on the site © Borisovets



Fig. 30: Wetland © Vilppola



Fig. 31: Existing building on the site Ruissalontie ©Tubeo



Fig. 32: Existing building on the site © Vilppola



Fig. 33: Existing building on the site © Vilppola



Fig. 34: Inside the existing buildings © Cosic

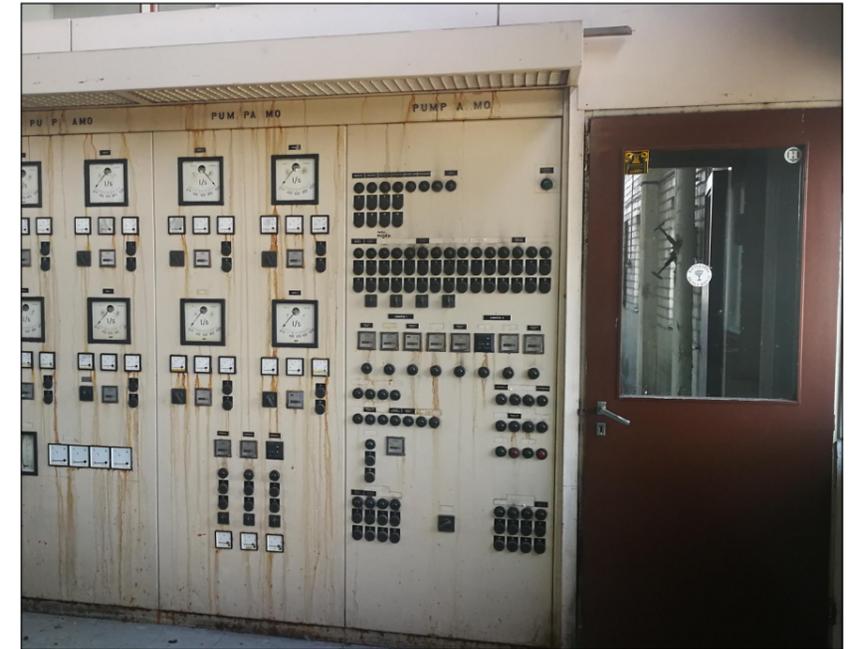


Fig. 35: Inside the existing buildings © Cosic



Fig. 36: Wetland © Vilppola



Fig. 37: Storage on the site © Tubeo



Fig. 38: Storage on the site © Borisovets



Fig. 39: Storage on the site © Spanlang



Fig. 40: Park in the west of the site © Vilppola



Fig. 41: Existing building in the park © Vilppola



Fig. 42: Plaque in the park © Vilppola



Fig. 43: Valuable trees within the site © Tubeo



Fig. 44: Valuable trees within the site © Vilppola



Fig. 46: Valuable trees and wetland within the site © Tubeo

Originally, urban planning and design has been approached with a top-down methodology where planners and architects are commissioned by private or public developers to use their knowledge and skills to create spaces for people. However, there is a growing shift towards a more collaborative approach using bottom-up methods and providing the local community the opportunity to take control of what they would like to see and creating places which they are more likely to use.

*The purpose of this **Process Toolbox** is to provide the methodology of involving different stakeholders during the design, construction and occupancy of the site. This **Process Toolbox** may also be implemented for all developments going forward.*

CHAPTER 2

METHODOLOGY AND OUTCOME

CONCEPT, DESIGN, PLAN, PROCESS

The concept, design and plan of Vaasanpuisto has been developed on the analysis of the demographics, urban systems and future projections of the neighbourhood.

Our vision is to combine the past, present and future of the site to create a community research space around innovative initiatives that preserves the existing ecosystems. This includes educating the local and wider Turku/ Finland area around the history of the site and involving the community towards the future of more sustainable land development.

I. OVERALL PROJECT CONCEPT

The outcome for the Vaasanpuisto focuses on the organic transformation over a longer period of time. Therefore, the conceptual development is based on the current ecosystem and existing structures in the site. The attempt was also made to establish a reference to the current strategy of the city of Turku (Kaupunkistrategia Turku 2029) and to cover as many of the city's goals as possible by means of a holistic approach (see Fig. 49 for the goals in terms of attractiveness, competitiveness, sustainability and wellbeing). This development has been defined through four different phases:

- **Public Access**
- **Transformation**
- **Long-term Construction**
- **Occupancy Engagement Activities**

These phases are then separated into key steps with consideration of the sustainable systems that can be implemented.

SUSTAINABLE SYSTEMS METHODOLOGY

There are three key areas: the environment, the social subsystem and the economic subsystem in order to approach the outcome towards a more resilient and sustainable neighbourhood.

THE ENVIRONMENT

In order to ensure areas are developed in a more sustainable way, it is important to consider the existing ecosystem of the site and the ecological impacts throughout the design, construction and occupancy of the area. This is a priority as socio-economic systems need to be considered within the biosphere we operate in.

HUMAN SYSTEMS

The human system is the consideration of the social and economic systems within the environment in order to function as sustainably as possible. The integration of the two subsystems includes the governance of the community through collaboration and leadership to create an economic output for the development. As the vision for Vaasanpuisto is to involve the local and wider community, it is important to also involve people throughout the construction as an socio-technical opportunity to understand the multi-faceted process of realising the outcomes for the site.

This includes the following considerations:

- How the community can be involved in the environmental and/or ecological outcomes.
- The actors/stakeholders in each phase.
- How the outcome can be financed during each phase.

This methodology can also be applied to other area developments in the future.



Fig. 49: Vision of the City of Turku

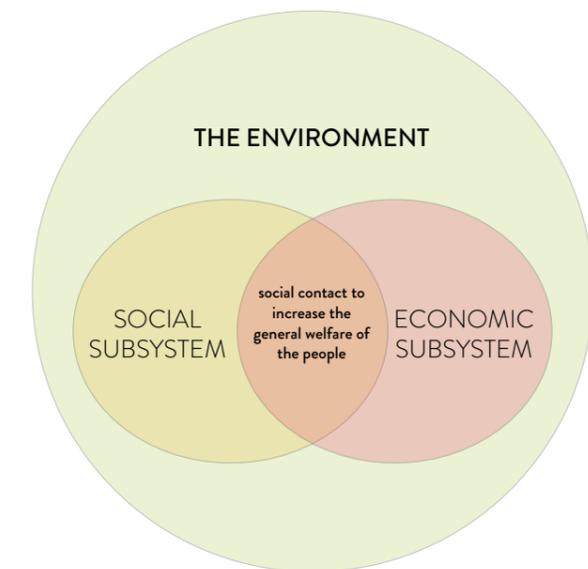


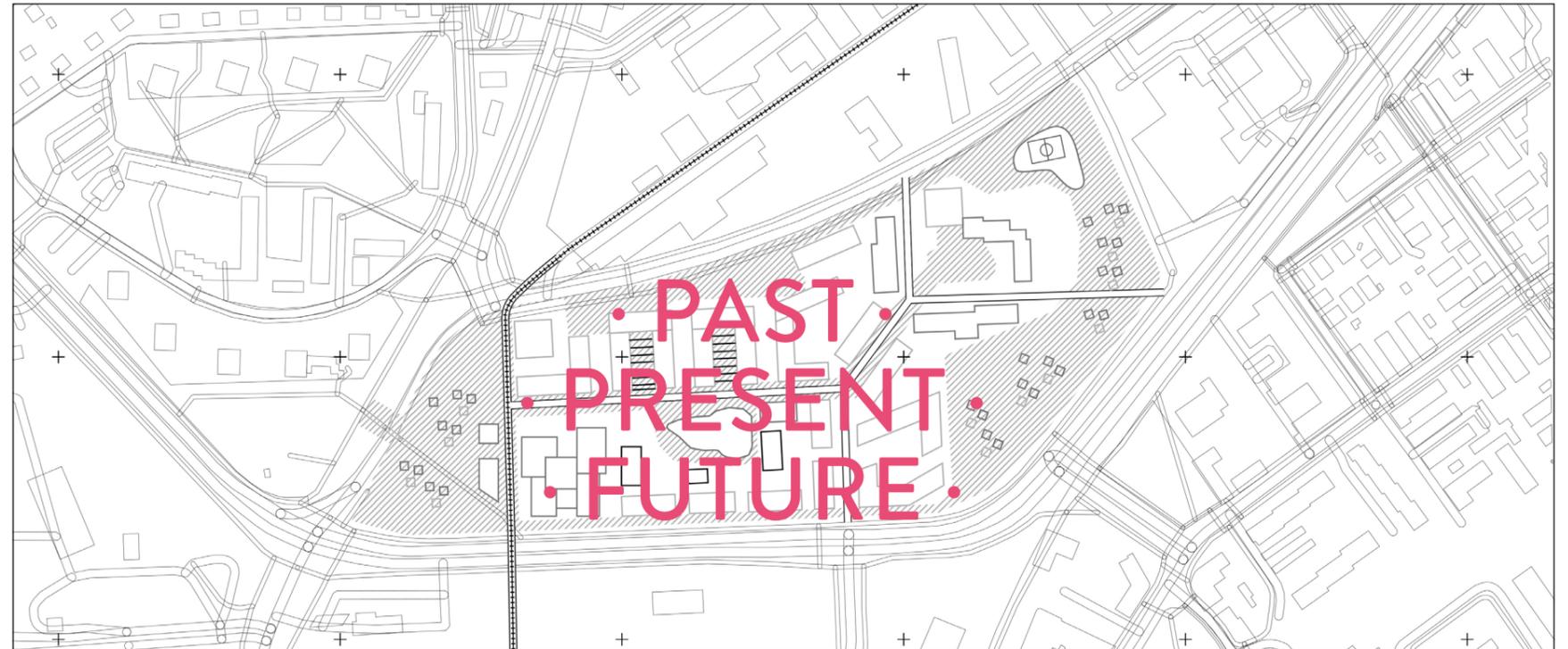
Fig. 50: Sustainable Systems

II. OUR VISION FOR VAASANPUISTO

The outcome for Vaasanpuisto takes into consideration the combination of the past, present and future analysis of the site, surrounding areas and Turku City. These include the following:

- Past: Wastewater Treatment Plant
- Present: Stormwater Collection, Existing Structures, Valuable Trees
- Future: Residential Community, School Education

As the city plans on developing a school within the site, this can be implemented throughout Vaasanpuisto as a hub for education, research and innovation for all ages as a multi-purpose space.



TECHNICAL FOCAL POINTS

Based on the analysis, a key focus within this experimental and learning space would be integrating the historical purpose of the site as a wastewater treatment plant through repurposing the existing buildings and creating an alternative approach to treating wastewater for all the temporary and long-term uses within Vaasanpuisto.

ECOLOGICAL FOCAL POINTS

Another key focus is transforming the site while preserving and enriching the existing ecological systems on the site such as the valuable trees which are currently located on contaminated soil. This is another opportunity to experiment with natural decontamination processes such as phytoremediation.

SOCIO-ECONOMIC FOCAL POINTS

In order to achieve the technical and ecological focal points, it's important to consider how they can be realised socially and economically. Therefore, stakeholder engagement is a key process that is required throughout the phases. By involving the local and wider community, it will foster ideas for financing the development as well as allow them to actively take part in the design, construction and occupancy of Vaasanpuisto.

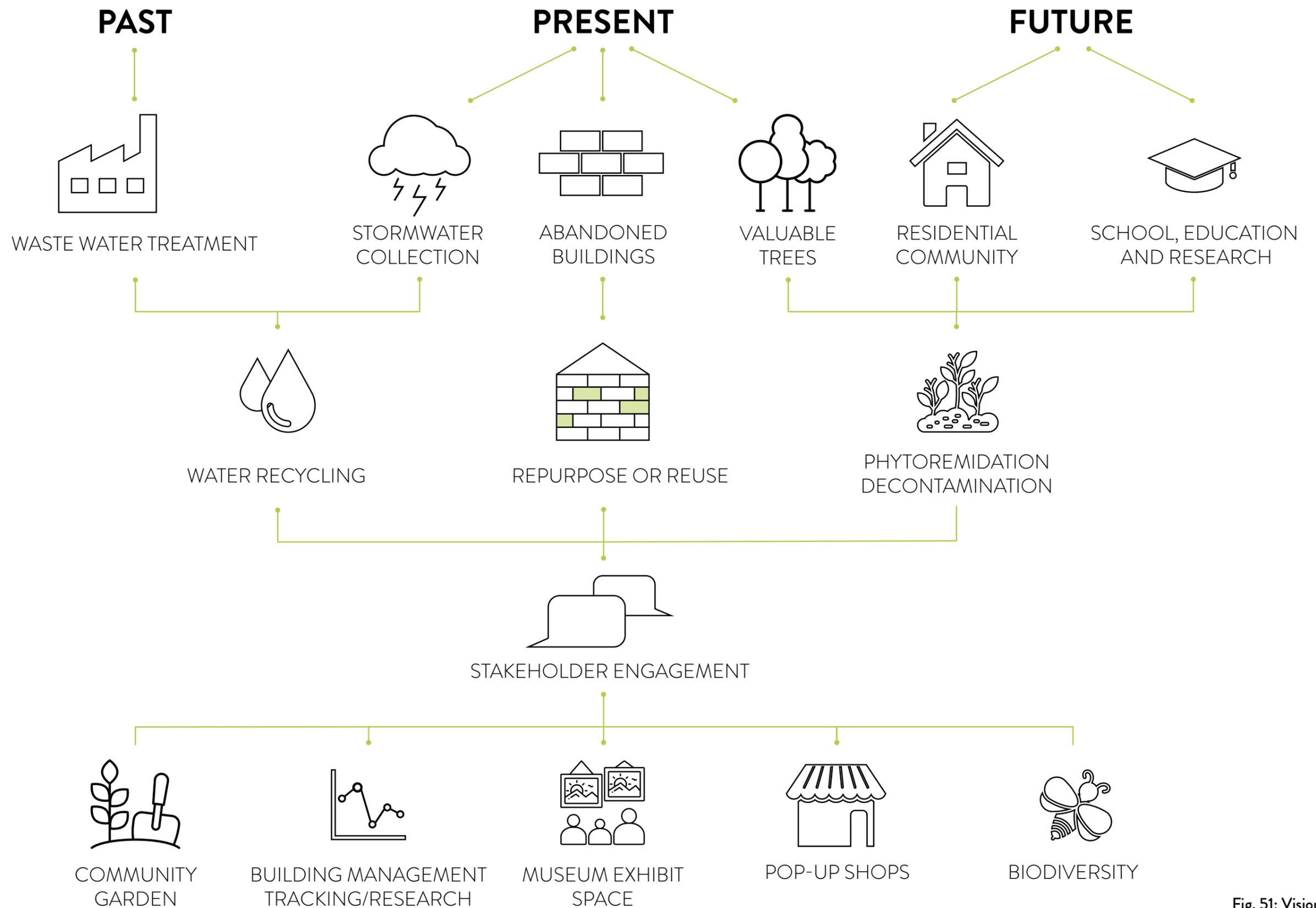


Fig. 51: Vision

III. STAKEHOLDER - MAPPING

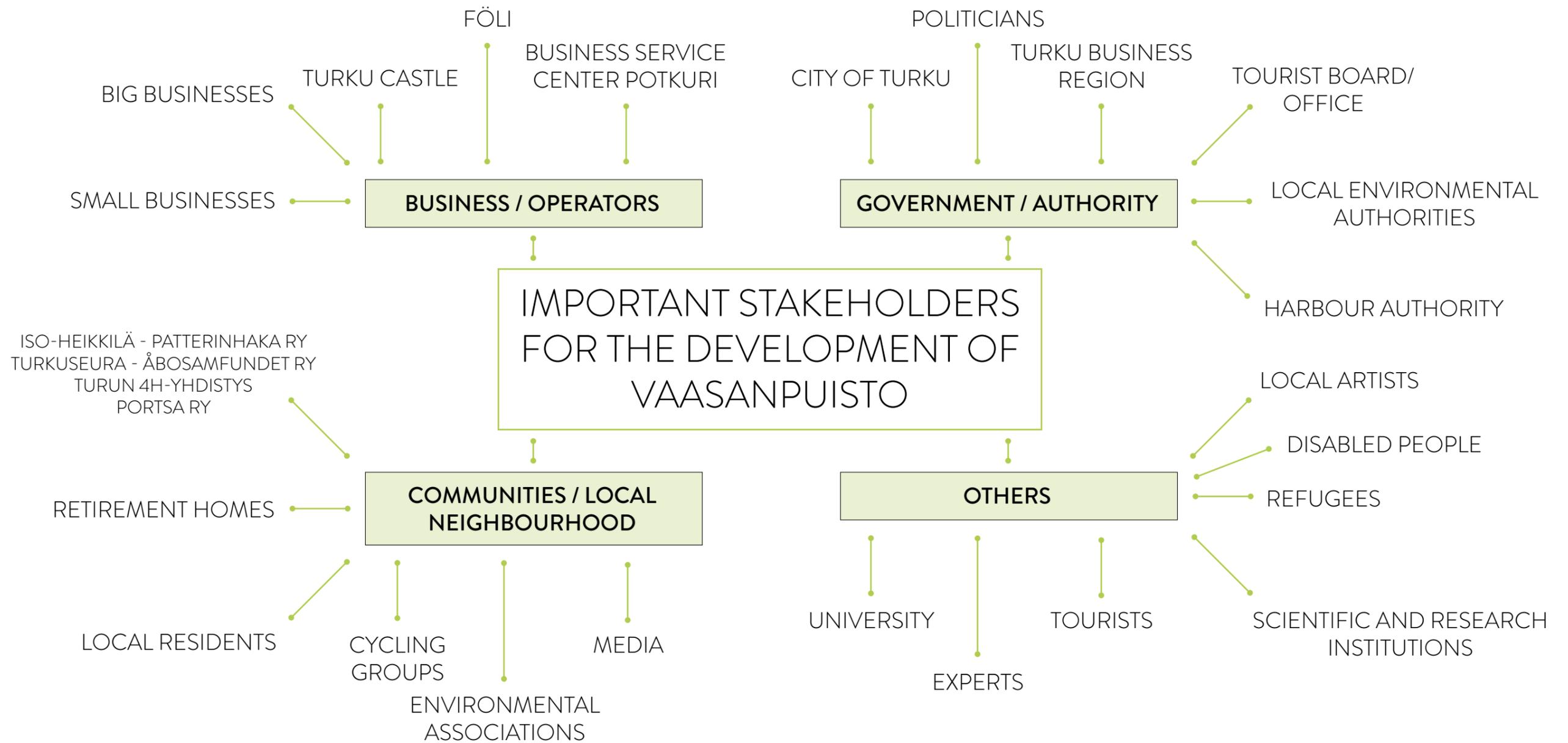


Fig. 48: Stakeholder Mapping

III. FROM IDEA TO REALIZATION · PHASE 0



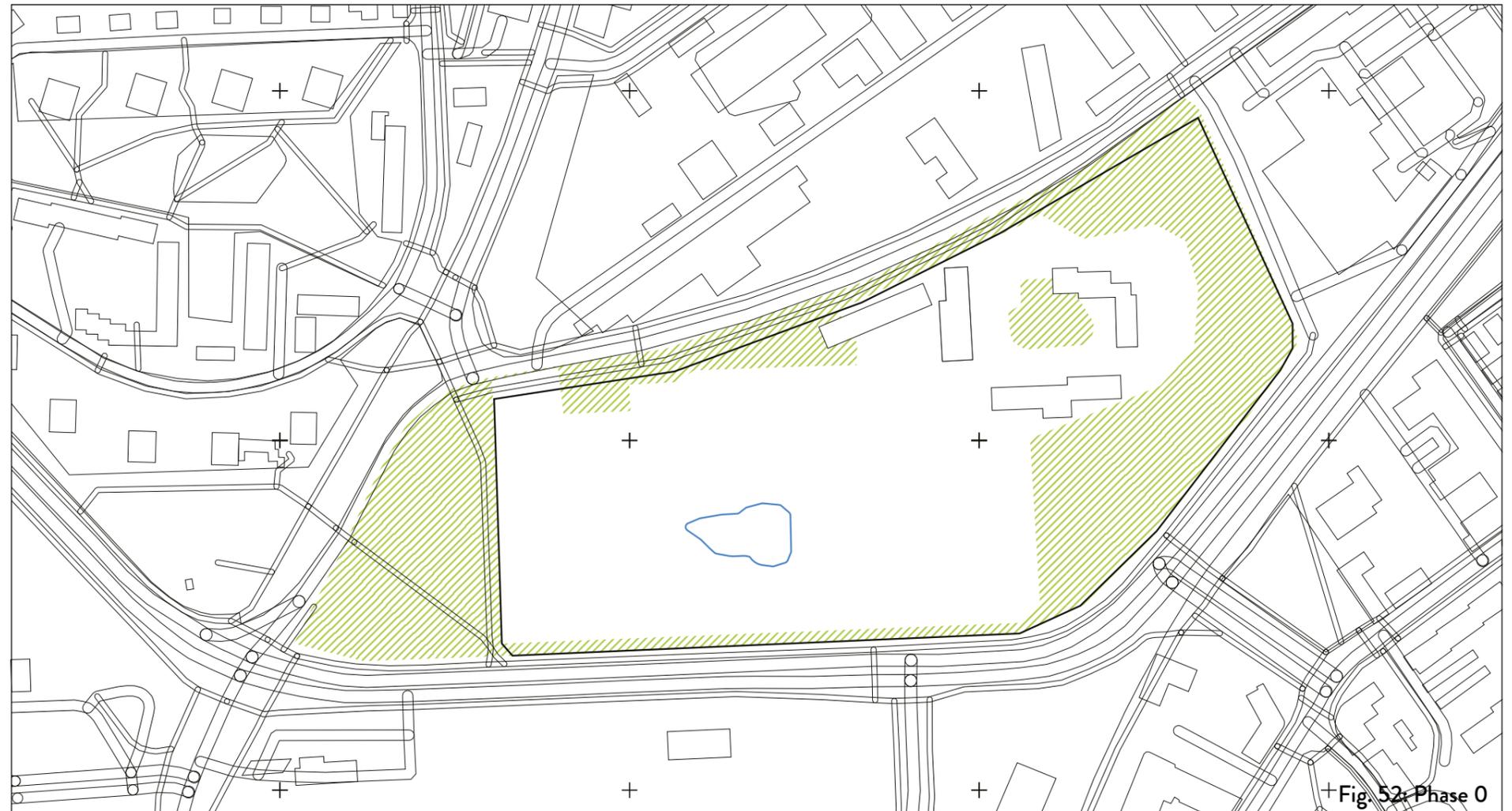
TIMELINE

M Do Analysis

Preliminary Phase: Do analysis!

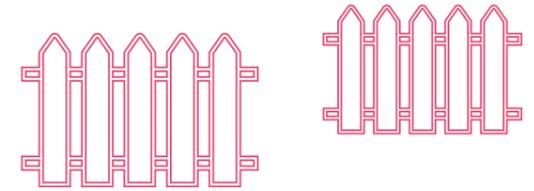
Before developing a site, it is important to gain and foster the knowledge of the plot itself, the connectivity with the surroundings and the embedding in existing structures. In case of the development of Vaasanpuisto in-depth studies on the level of contamination and the feasibility of decontamination, stormwater harvesting, water recycling

and solar systems should be made. Further, engagement about ongoing social activities and events in the neighbourhood could be helpful to decide which activities would be suitable on the site. Important stakeholders in the phase are university researchers as well as the City of Turku.



+ Fig. 52 Phase 0

III. FROM IDEA TO REALIZATION · PHASE 1



TIMELINE

M  **Do Analysis**

N  **Gain access**

Phase One: Gain access!

When it comes to developing a habitable area, it is always important to involve the public. Citizens or other interested people are the ones that enliven a neighbourhood; therefore, a central aspect is to create identification with the site and its surroundings. In this sense, opening Vaasanpuisto to the public is planned in phase one. Right now parts of the venue are accessible for some events, e.g. concerts with a high noise level or sports events. To open it up permanently and not only during events, the first step would be the demolition of the existing fence. Following the removal of the fence, the area near the existing groundwater catchment could be developed by engineers and researchers together with the public. Thereby considerations could be taken on how this public space can be used, e.g. for ice-skating in winter or pedal-boats and swimming during summer. Developing the pond and preserving the existing wetland could also enhance the biodiversity.

It is further planned to reuse the shipping containers that are already located on the site to create pop-up labs, shops and a pop-up sauna. In this way, a longer-term installation on the construction site can be ensured. The pop-up research lab should accompany the entire process and thus analyse whether the process is actually sustainable and efficient. To co-finance the construction and to enliven the area, pop-up shops and a pop-up sauna could temporarily be placed around the pond. In this step, numerous stakeholders play an important role, e.g. the neighbourhood and the public in general, the university and the City of Turku, environmental associations, local associations as the Iso-Heikkilä - Patterinhaka ry, Turkuseura - Åbosamfundet ry, Turun 4H-yhdistys, Portsa ry or Turun Ursa ry. Also nearby located retirement homes could be taken into account.

III. FROM IDEA TO REALIZATION · PHASE 1

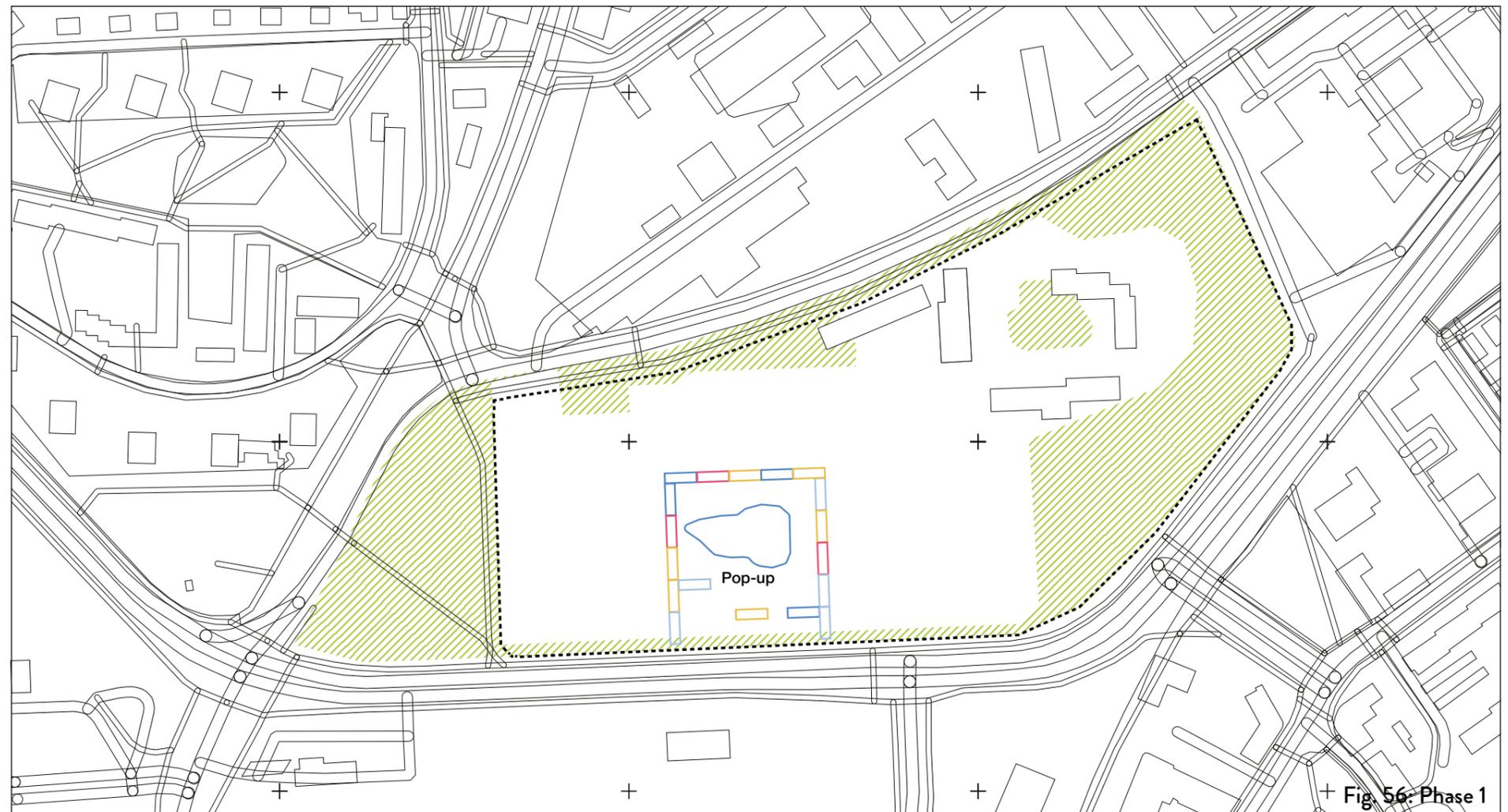
TIMELINE

M Do Analysis

N Gain access



Fig. 53: Pop-up Containers, Seoul
Fig. 54: Pop-up Sauna, Fulda
Fig. 55: Decontaminated Pond, Pittsburgh



+ Fig. 56: Phase 1

III. FROM IDEA TO REALIZATION · PHASE 1

TIMELINE

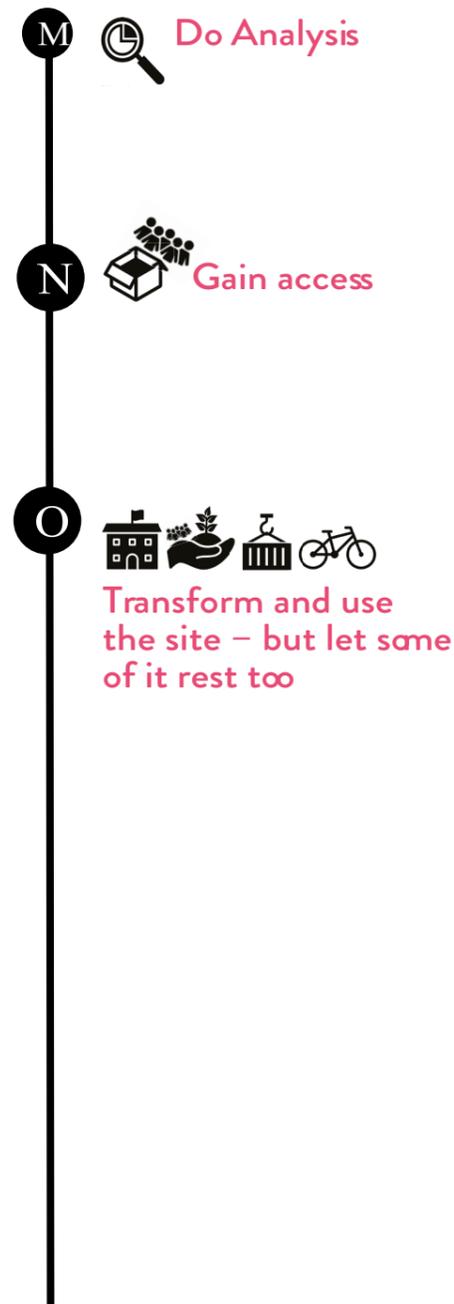


STEP	DESCRIPTION	SUSTAINABLE SYSTEMS METHODOLOGY	STAKEHOLDERS
Fence Demolition 2-3 days	Removal of the wire fence that currently surrounds the site	<p>Environmental: Reuse of materials on site</p> <p>Social: Help demolish the fence Community engagement Opening event</p> <p>Economic: Revenue from opening event to finance development</p>	<p>Local community:</p> <ul style="list-style-type: none"> • Iso-Heikkilä - Patterinhaka ry • Turkuseura - Åbosamfundet ry • Turun 4H-yhdistys • Portsa ry • Retirement homes • Turun Ursa ry • Media • Environmental associations <p>Government/Authority:</p> <ul style="list-style-type: none"> • City of Turku • Waste management authority <p>Business/Operators:</p> <ul style="list-style-type: none"> • Business Service Center Potkuri • Small businesses • Big businesses
Groundwater Catchment Area Ongoing	Development and use of the catchment area for social activities	<p>Environmental: Retaining existing catchment location Biodiversity landscaping selection Reticulation system to provide water for irrigation and toilets</p> <p>Social: Community engagement Ongoing social activities</p> <p>Economic: Revenue from social activities to finance development</p>	<p>Local community:</p> <ul style="list-style-type: none"> • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • NGOs • Media • Environmental associations <p>Government/Authority:</p> <ul style="list-style-type: none"> • City of Turku • Environmental authorities <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes • Architects and Engineers
Temporary Hub 10 years	Create and occupy a local mixed-use temporary space for businesses, research, education and social activities	<p>Environmental: Repurpose shipping containers PV and solar hot water system Compost toilet Greywater biofiltration system Organic compost</p> <p>Social: Local organisations/ community engagement Educational activities Community activities App/ website development for public interaction and education</p> <p>Economic: Revenue from renting shipping containers Tourism revenue from renting shipping containers as eco-accommodation</p>	<p>Local:</p> <ul style="list-style-type: none"> • Schools • NGOs • Iso-Heikkilä - Patterinhaka ry • Turkuseura - Åbosamfundet ry • Turun 4H-yhdistys • Portsa ry • Retirement homes • Turun Ursa ry • Media • Disability advocates <p>Municipality:</p> <ul style="list-style-type: none"> • City of Turku • Port of Turku • Environmental authority • Tourist office or board <p>Business/Operators:</p> <ul style="list-style-type: none"> • Small businesses • Big businesses • Business Service Center Potkuri <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes • Architects and Engineers

III. FROM IDEA TO REALIZATION · PHASE 2



TIMELINE



Phase Two: Transform & use the site, but let some of it rest too!

The first, most important and also longest lasting process of phase two is the decontamination of the contaminated land. Through phytoremediation, a technology using living plants to clean up soil, air or water contaminated with hazardous contaminants, the soil could be cleaned and thus be prepared for later use. This technology will be applied on the most contaminated soil of the plot in the east and the central parts. In order to involve the population, events such as volunteer planting days or clean-up days could be held. Another idea to co-finance the construction and strengthen identification people could be offered the opportunity to adopt a tree on the site. A school is urgently needed on the site, it is planned to carry out an excavation for the selected area in the south-west area. This location will also have a mobility point with a connected cafe for lending bicycles, e-bicycles or cargo bicycles or just to repair broken bicycles (“Repair Café”) and carry out outdoor activities in the park are planned. The school could also include multifunctional spaces for a variety of uses such as an open library for the pupils, students and the neighbourhood and a maker’s space in order to do handicrafts or repair items.

As not all of the forest on the site is affected by contamination, that part which is already usable and does not contain the most valuable trees could be converted into an edible and sensory garden for the population and may also include a “natural playground”. Since the northern part of the forest is most affected by flooding events, it is planned to build a second pond here. This pond should in contrast to the existing pond in the

middle of the venue only serve as a collecting basin in case of heavy rainfall events and therefore only filled with water while flooding to preserve the surrounding buildings from getting flooded. Otherwise it could be drained and used as a basketball court.

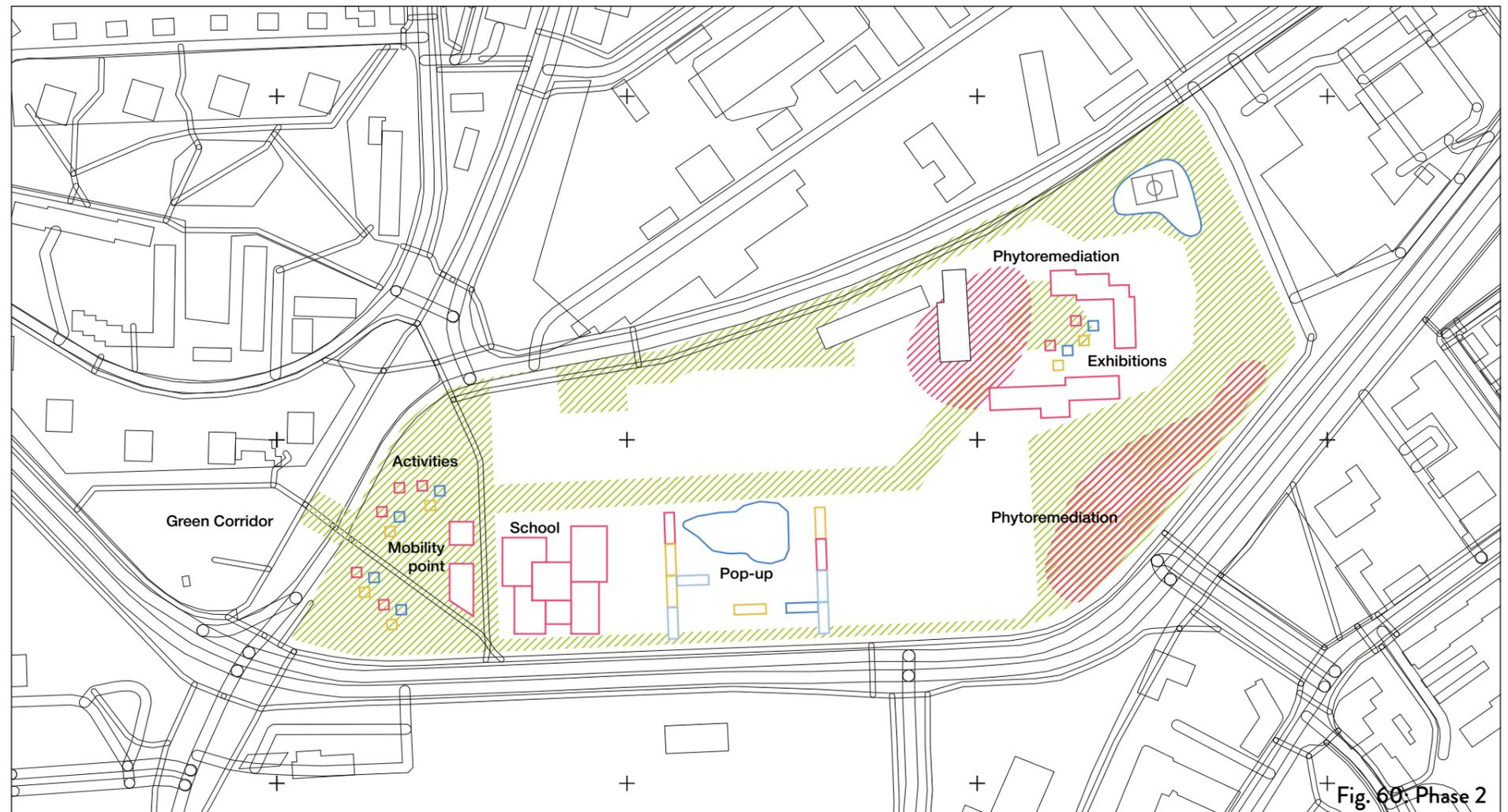
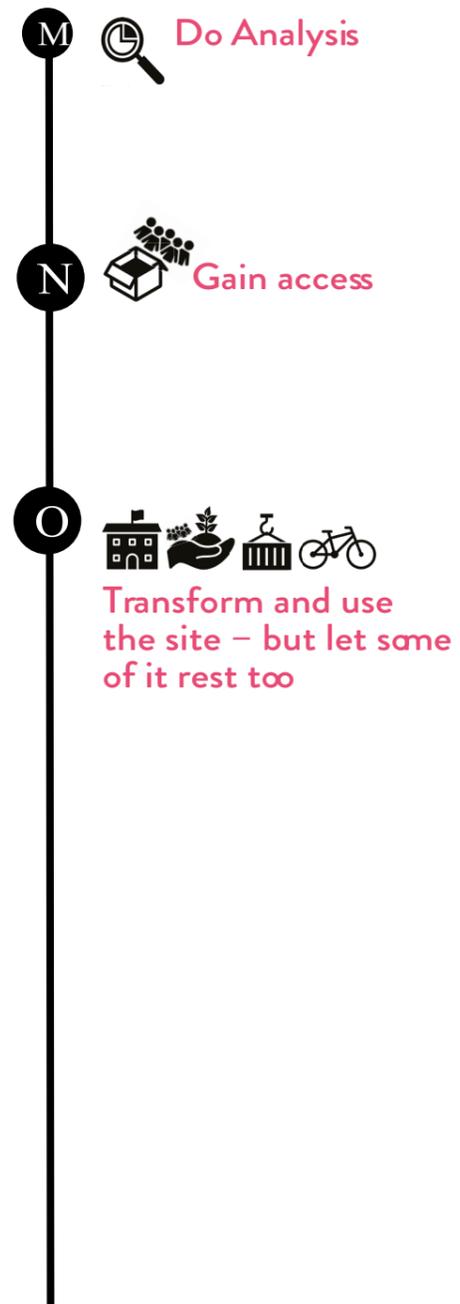
The existing buildings on the site are contaminated too, the possibility to use the buildings permanently is therefore questionable. To gain money and activate the houses a temporary use is planned at the beginning with the option to use the buildings permanently in the following years. Possible purposes of use are pop-up exhibitions, events or to develop a mapping lab to check the efficiency of the area, which was previously carried out in the containers. To activate also the green space between the buildings urban gardening could be carried out here.

To connect the western park with the pond in the centre of Vaasanpuisto and the existing buildings with the forest in east a main boulevard should be built. In the area of the park in the west this path should be elevated and include a green bridge for pedestrians and all other species across the street to connect the site with the adjacent park (Patterinpuisto). On the site itself the path should be accessible for pedestrians and cyclists, and could include some water features, e.g. a small fountain in front of the school. In the eastern part the boardwalk should due to flooding events be elevated as well and meander through the forest to ensure relaxed strolls.

III. FROM IDEA TO REALIZATION · PHASE 2

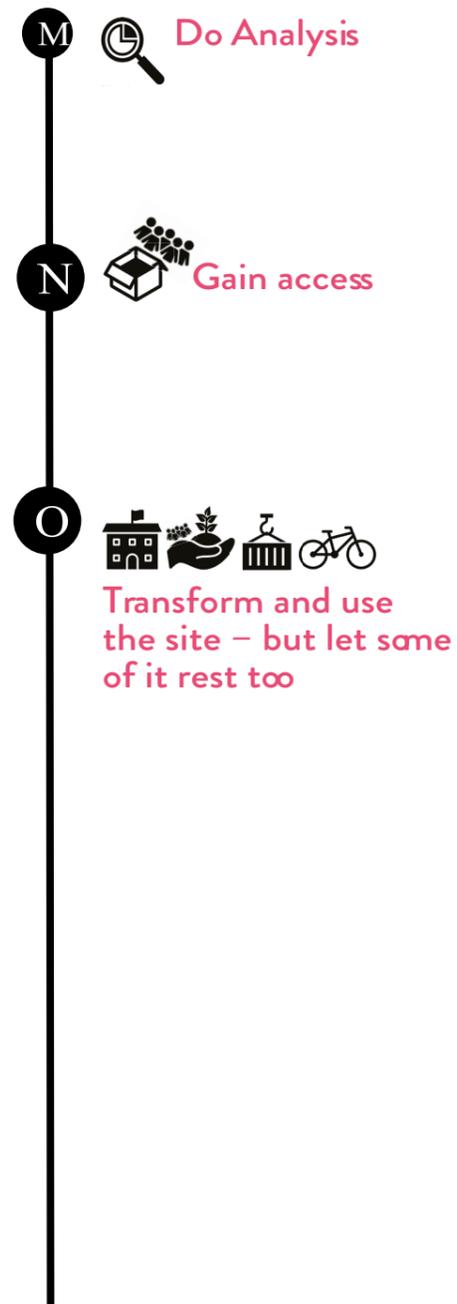
Fig. 57: Educational campus, Vienna
 Fig. 58: Elavated Boardwalk, Deceuel
 Fig. 59: Clean-up -day

TIMELINE



III. FROM IDEA TO REALIZATION · PHASE 2

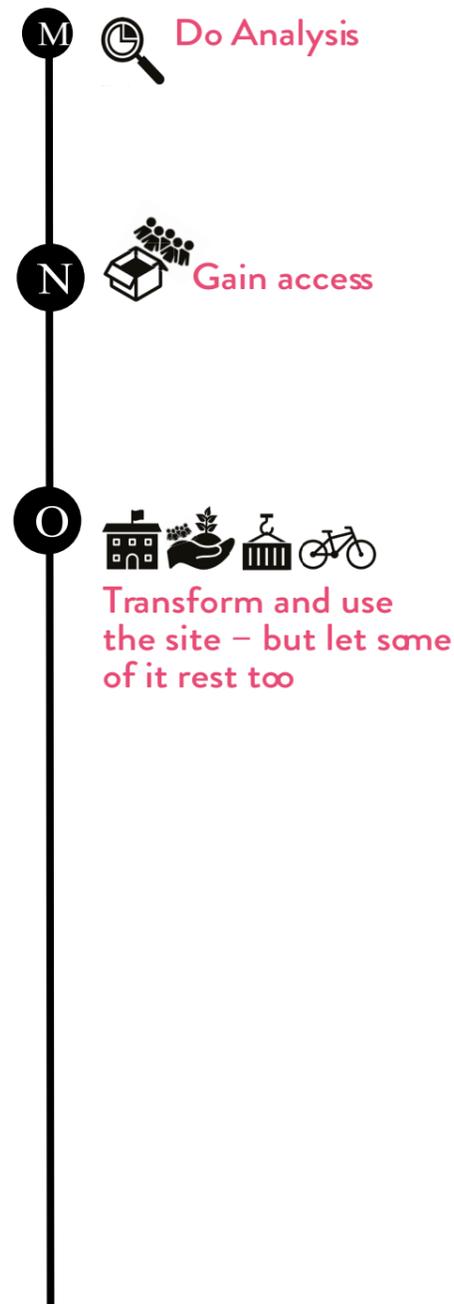
TIMELINE



STEP	DESCRIPTION	SUSTAINABLE SYSTEMS METHODOLOGY	STAKEHOLDERS
Site Decontamination 6 months - 20 years	Process for decontaminating the soil through natural landscaping and excavation of school site	<p>Environmental: Retaining existing valuable trees Phytoremediation Planting of bamboo to provide construction resources</p> <p>Social: Community Involvement Volunteer clean-up and planting days</p> <p>Economic: Revenue from adopting a tree</p>	<p>Local:</p> <ul style="list-style-type: none"> • NGOs • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • Retirement homes • Environmental associations • Media • Schools <p>Municipality:</p> <ul style="list-style-type: none"> • City of Turku • Environmental authority <p>Business/Operators:</p> <ul style="list-style-type: none"> • Small businesses • Big businesses <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes <p>Government/Authority:</p> <ul style="list-style-type: none"> • City of Turku • Waste management authority <p>Business/Operators:</p> <ul style="list-style-type: none"> • Business Service Center Potkuri • Small businesses • Big businesses
School Construction 1-2 years	Construction of the school area with multi-purpose functions: library, makerspace, health clinic and mobility hub	<p>Environmental: Prefabricated construction Integrated PV/ Green Roof Greywater and blackwater recycling Building consumption tracking system Organic compost</p> <p>Social: Community engagement Multi-purpose functions School fairs</p> <p>Economic: Revenue from school fairs once complete to fundraise maintenance and further development of site Revenue from renting spaces</p>	<p>Local:</p> <ul style="list-style-type: none"> • Schools • Iso-Heikkilä - Patterinhaka ry • Turkuseura - Åbosamfundet ry • Portsa ry • NGOs • Disability advocates <p>Municipality:</p> <ul style="list-style-type: none"> • City of Turku <p>Business/Operator:</p> <ul style="list-style-type: none"> • Föli <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes • Architects and Engineers
North-East Stormwater Catchment Area 6 months	Excavation of area to create a dual-function stormwater catchment and sports court	<p>Environmental: Water sensitive urban design system Provides water for nearby irrigation and toilets</p> <p>Social: Community involvement Opening sports event</p> <p>Economic: Revenue from opening sports event</p>	<p>Local:</p> <ul style="list-style-type: none"> • NGOs • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • Retirement homes • Schools • Disability advocates • Cycling groups • Media

III. FROM IDEA TO REALIZATION · PHASE 2

TIMELINE

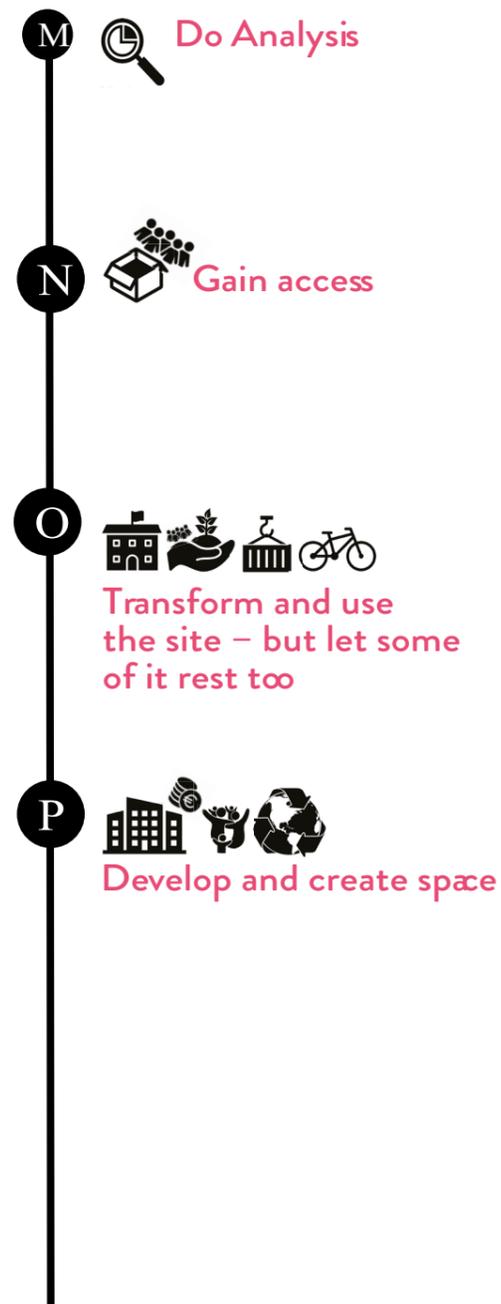


STEP	DESCRIPTION	SUSTAINABLE SYSTEMS METHODOLOGY	STAKEHOLDERS
North-East Stormwater Catchment Area 6 months	Excavation of area to create a dual-function stormwater catchment and sports court	<p>Environmental: Water sensitive urban design system Provides water for nearby irrigation and toilets</p> <p>Social: Community involvement Opening sports event</p> <p>Economic: Revenue from opening sports event</p>	<p>Municipality:</p> <ul style="list-style-type: none"> City of Turku Environmental authority <p>Business/Operators:</p> <ul style="list-style-type: none"> Small businesses Big businesses Business Service Center Potkuri <p>Expert:</p> <ul style="list-style-type: none"> Universities Research Institutes Architects and Engineers
Existing Buildings 2-3 years	Repurpose of the existing buildings with multi-purpose functions: museum/exhibition/ event space, permanent research and site analysis/ mapping hubs	<p>Environmental: Retain existing building structures Bioswale in courtyard area Integrated PV/ Green Roof Building consumption tracking system Organic compost</p> <p>Social: Community engagement Multi-purpose functions Events</p> <p>Economic: Revenue from exhibition events for further development of site Revenue from renting spaces for further development of site</p>	<p>Local:</p> <ul style="list-style-type: none"> NGOs Iso-Heikkilä - Patterinhaka ry Turun 4H-yhdistys Retirement homes Turun Ursa ry Schools Media Disability advocates <p>Municipality:</p> <ul style="list-style-type: none"> City of Turku Tourist office or board <p>Business/Operators:</p> <ul style="list-style-type: none"> Small businesses Big businesses Turku Castle Business Service Center Potkuri <p>Expert:</p> <ul style="list-style-type: none"> Universities Research Institutes Architects and Engineers
Accessibility Routes 1-2 years	Development and construction of pedestrian and cycling routes on the site	<p>Environmental: Bamboo boardwalks from phytoremediation planting of less contaminated areas Re-use of construction materials waste from surrounding neighbourhoods</p> <p>Social: Community involvement Volunteer boardwalk construction days</p> <p>Economic: Indirect economic benefit providing ease of access to increase foot traffic for local businesses</p>	<p>Local:</p> <ul style="list-style-type: none"> Schools NGOs Iso-Heikkilä - Patterinhaka ry Retirement homes Cycling groups Disability advocates <p>Municipality:</p> <ul style="list-style-type: none"> City of Turku <p>Expert:</p> <ul style="list-style-type: none"> Universities Research Institutes Architects and Engineers

III. FROM IDEA TO REALIZATION · PHASE 3



TIMELINE



Phase Three: Develop and create space!

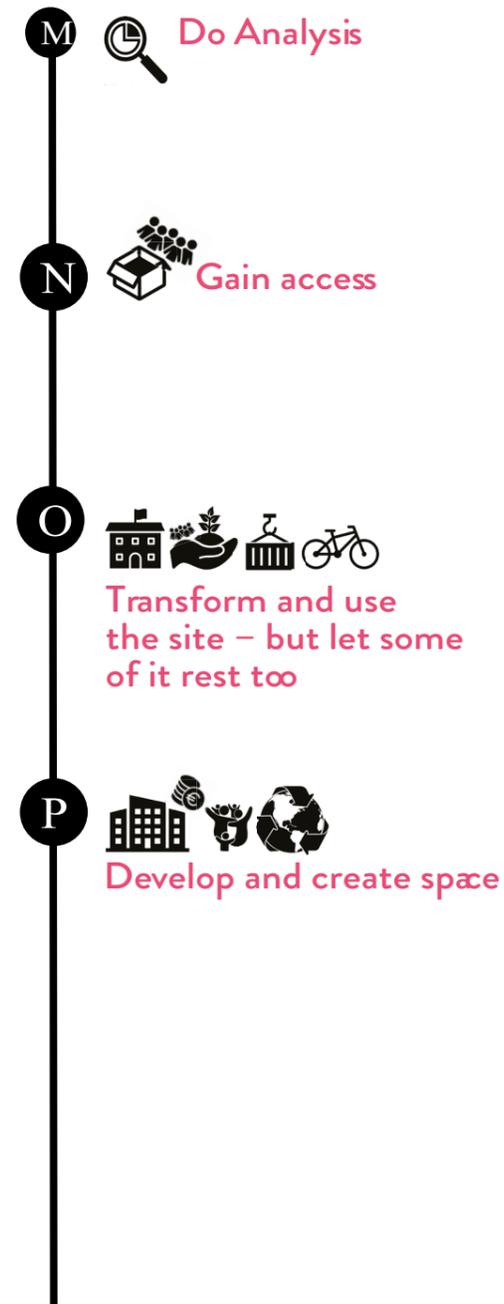
In the third phase – after phytoremediation is completed – the development of residential area and mixed-use buildings could start. Different kind of buildings from more public to more private, more opened to closed structures with different heights and materials are planned.

The highest buildings should be located in the north of the area, e.g. a wooden building with eleven storeys for students is planned

in the west of the building. The buildings around the pond should serve a rather semiprivate purpose, a terrace/slope with view over the pond between the buildings is therefore planned. Instead of containers a community could be built in the east of the pond, including a sauna, facilities to use the pond as well as a community kitchen. To close the courtyard between the existing buildings in east of the area an additional, high-rise building that stands that stands out from the rest of the buildings could be developed.

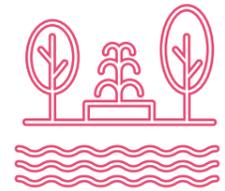
III. FROM IDEA TO REALIZATION · PHASE 3

TIMELINE

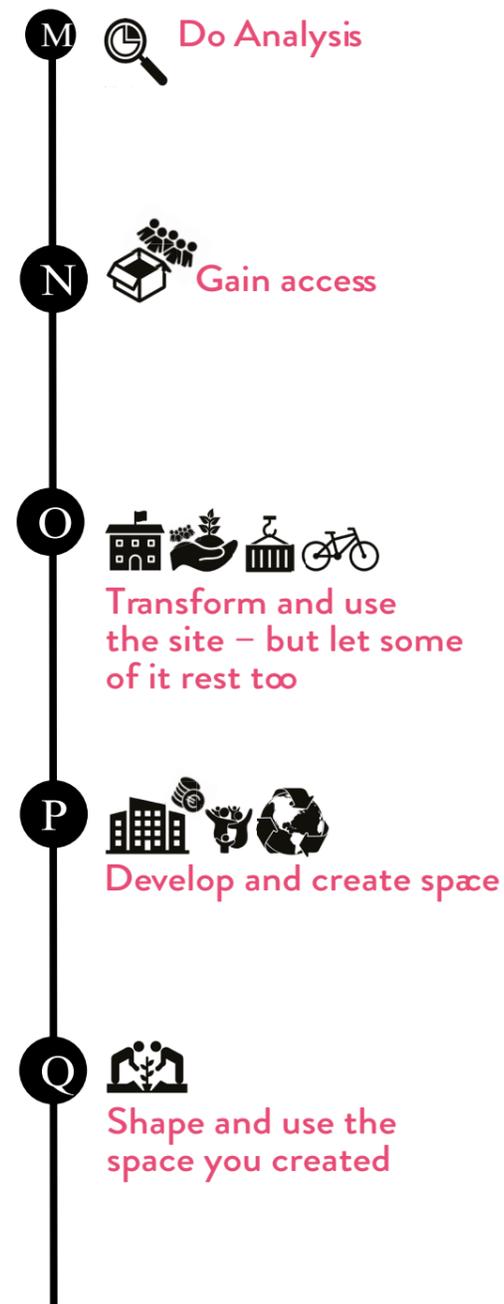


STEP	DESCRIPTION	SUSTAINABLE SYSTEMS METHODOLOGY	STAKEHOLDERS
Phytoremediation Removal 6 months	Removal and disposal of plants that have completed decontamination where construction will be	<p>Environmental: Bioenergy source</p> <p>Social: Community involvement Volunteer de-planting day</p> <p>Economic: Selling of plants to research laboratories</p>	<p>Local community:</p> <ul style="list-style-type: none"> • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • NGOs • Media • Retirement homes <p>Government/Authority:</p> <ul style="list-style-type: none"> • City of Turku • Environmental authorities <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes
Residential Construction 3-5 years	Development and construction of the long-term residential and mixed use spaces	<p>Environmental: Prefabricated construction Integrated PV/ Green Roof Greywater and blackwater recycling Building consumption tracking system Organic compost</p> <p>Social: Stakeholder engagement Mixed-use functions Population growth capacity</p> <p>Economic: Revenue from selling and renting spaces from development Private partnerships</p>	<p>Local community:</p> <ul style="list-style-type: none"> • Iso-Heikkilä - Patterinhaka ry • Turkuseura - Åbosamfundet ry • Portsa ry • NGOs • Media • Disability advocates • Environmental associations <p>Government/Authority:</p> <ul style="list-style-type: none"> • City of Turku • Environmental authorities • Turku Business Region <p>Business/Operators:</p> <ul style="list-style-type: none"> • Small businesses • Big businesses • Business Service Center Potkuri • Föli <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes • Architects and Engineers

III. FROM IDEA TO REALIZATION · PHASE 4



TIMELINE



Phase Four: Shape and use the space you created!

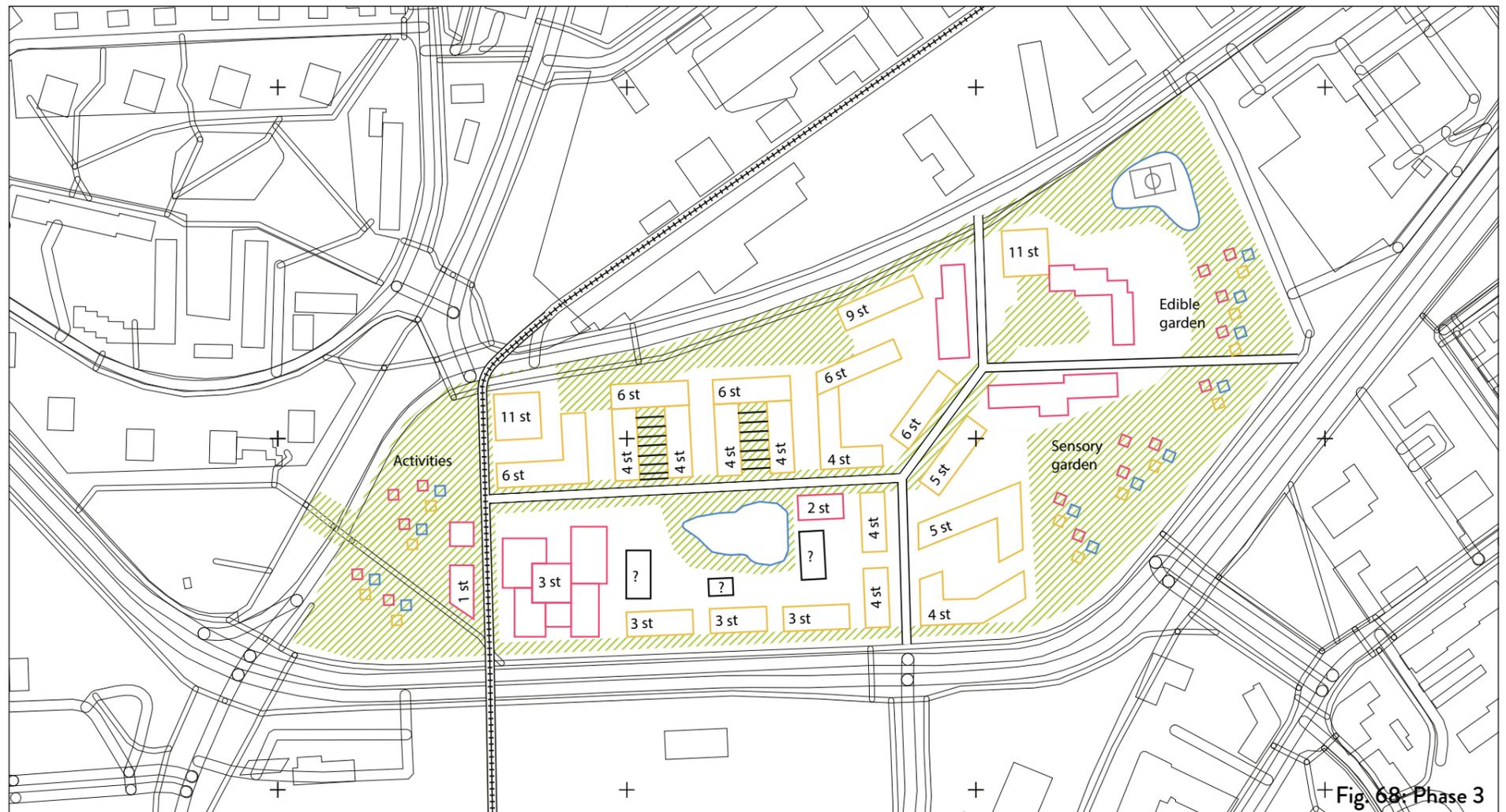
The design of different sequences of public spaces along the boulevard is a central element of the concept. The most important elements are soil (plants, e.g. to build swails) and water. While the park in the west should be shaped as a lively, rather loud and urban park, the centre around the pond could be understood as a relaxing, blue oasis. The forest in east on the contrary could be described as rather untouched, calm space. Creating the final landscaping is therefore the last phase of the concept for the Vaasanpuisto. In that step also educational designs, e.g. plaques informing about the history of Vaasanpuisto or the existing plants could be added.

III. FROM IDEA TO REALIZATION · PHASE 4

Fig. 65: Coutyard, Stavangr
 Fig. 66: Courtyard, Dresden
 Fig. 67: Community Garden, USA

TIMELINE

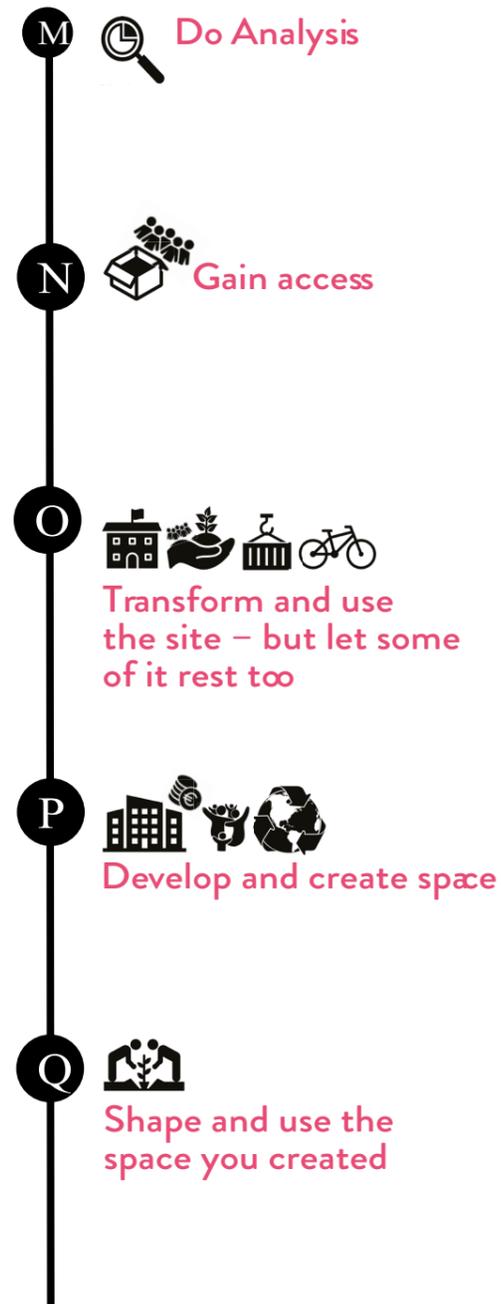
- M  Do Analysis
- N  Gain access
- O  Transform and use the site – but let some of it rest too
- P  Develop and create space
- Q  Shape and use the space you created



+ Fig. 68: Phase 3

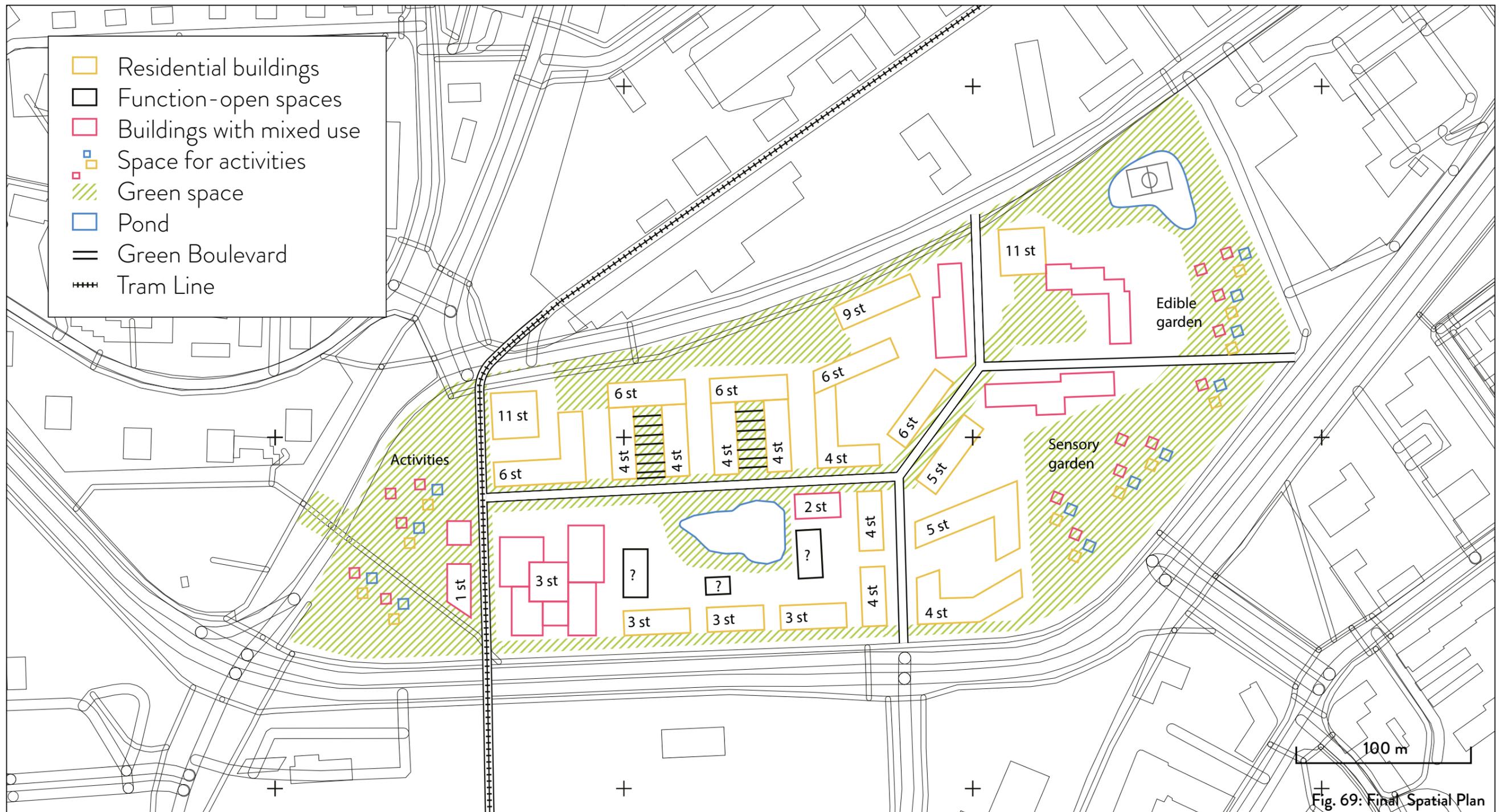
III. FROM IDEA TO REALIZATION · PHASE 4

TIMELINE



STEP	DESCRIPTION	SUSTAINABLE SYSTEMS METHODOLOGY	STAKEHOLDERS
Landscaping 6 months	Development and planting of biodiversity enhancement and edible landscaping	<p>Environmental: Enhancing biodiversity of local flora and fauna Native landscaping</p> <p>Social: Community Involvement Community gardens Volunteer planting days</p> <p>Economic: Revenue from adopting a tree Revenue from donating public seating</p>	<p>Local:</p> <ul style="list-style-type: none"> • NGOs • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • Retirement homes • Schools • Disability advocates • Environmental associations • Media <p>Municipality:</p> <ul style="list-style-type: none"> • City of Turku <p>Business/Operators:</p> <ul style="list-style-type: none"> • Small businesses • Big businesses <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes • Architects and Engineers
Community Events Ongoing	Development and planning of activities and materials for the community by the community	<p>Environmental: Reuse of reclaimed materials</p> <p>Social: Community led and inspired</p> <p>Economic: Private partnerships Fundraising Sponsored</p>	<p>Local:</p> <ul style="list-style-type: none"> • Environmental associations • Media • Cycling groups • Iso-Heikkilä - Patterinhaka ry • Turun 4H-yhdistys • Retirement homes • Turun Ursa ry • Schools • Disability advocates <p>Municipality:</p> <ul style="list-style-type: none"> • City of Turku • Port of Turku • Tourist board or office • Environmental authorities <p>Business/Operators:</p> <ul style="list-style-type: none"> • Small businesses • Big businesses • Business Service Center Potkuri • Turku Castle <p>Expert:</p> <ul style="list-style-type: none"> • Universities • Research Institutes

III. FROM IDEA TO REALIZATION · FINAL SPATIAL PLAN



III. CONCEPTUAL SKETCHES

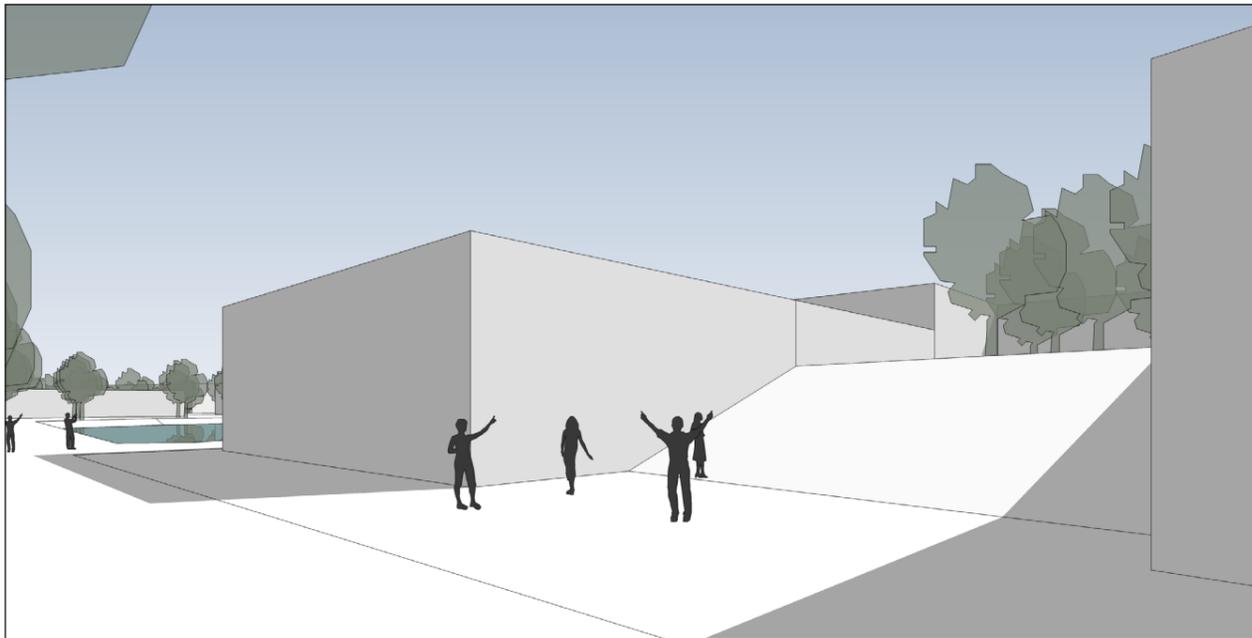


Fig. 70: School Courtyard



Fig. 72: Aerial View of the Pond



Fig. 71: Ramp to Residential Buidling



Fig. 73: Boulevard towards the pond

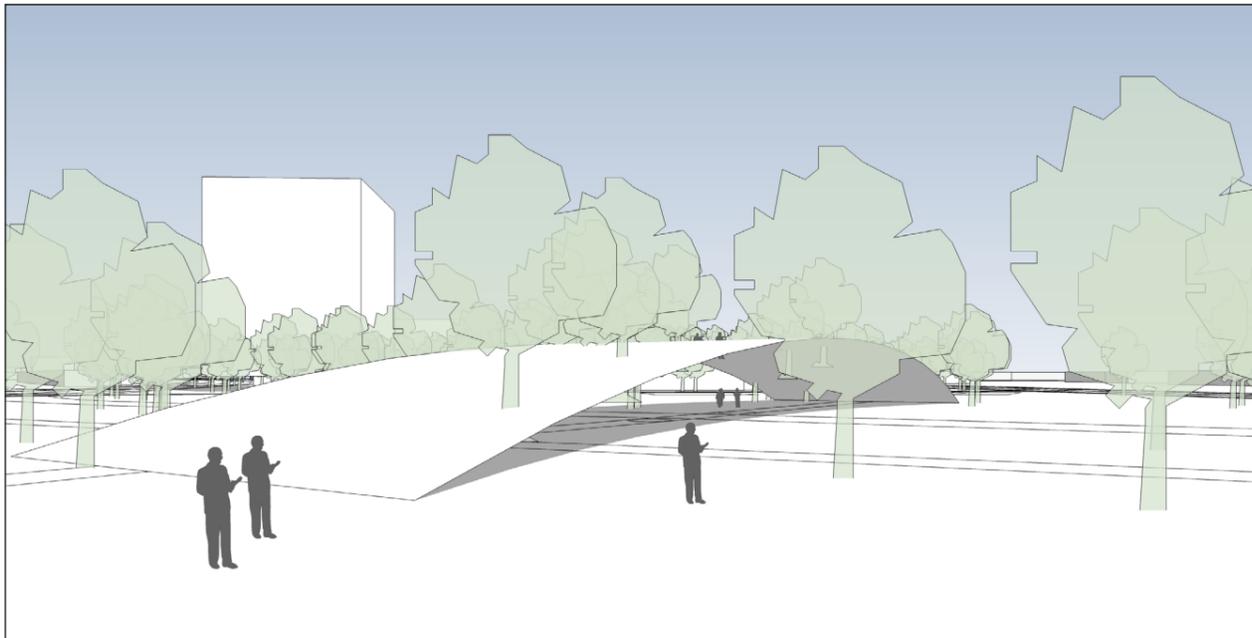


Fig. 74: Green bridge to enter Vaasanpuisto



Fig. 76: Elavated boardwalk

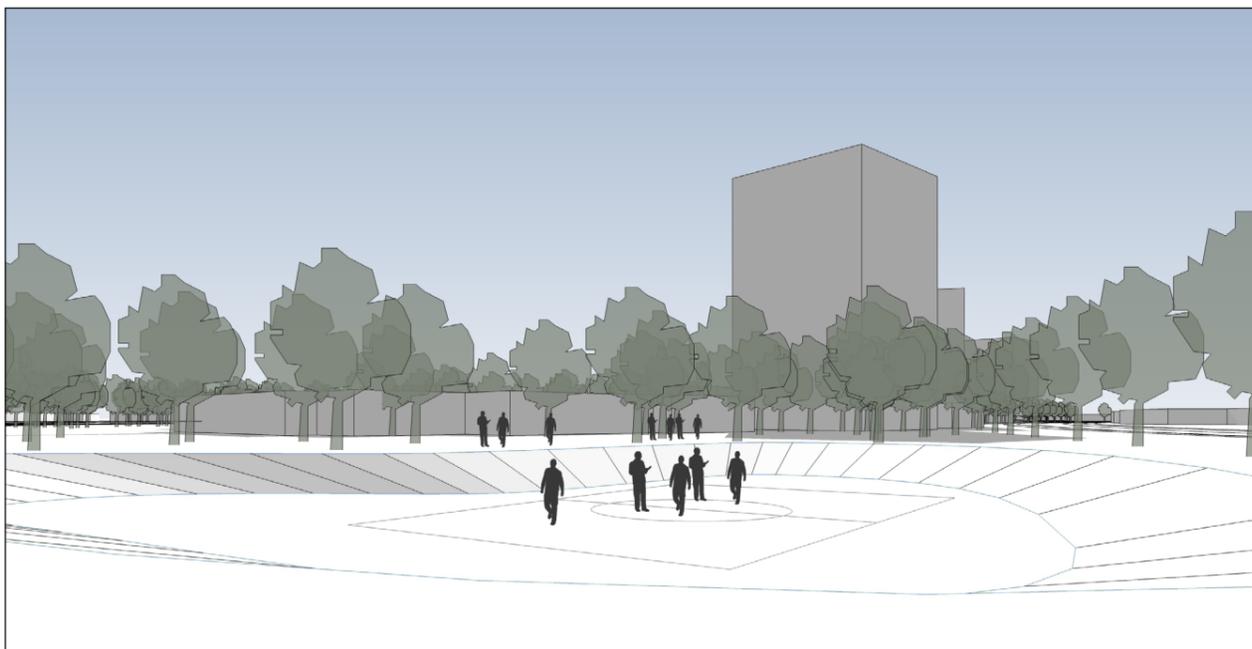


Fig. 75: Multifunctional pond / sports court

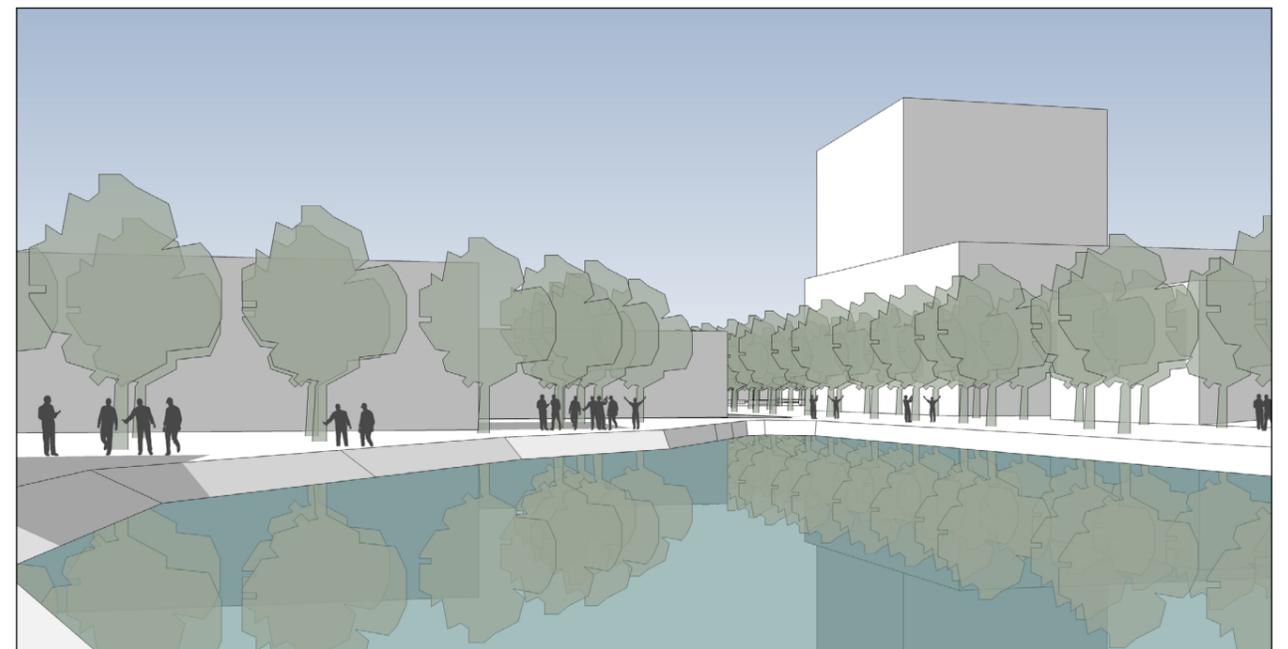


Fig. 73: Central pond with view of the residential area

✓ aaganpuisto is yours

